TWENTY-FOURTH ANNUAL REPORT

OF THE

BOARD OF TRUSTEES

OF THE

CLEMSON

AGRICULTURAL COLLEGE

TO THE

General Assembly of South Carolina

1913

COLUMBIA, S. C.
GONZALES AND BRYAN, STATE PRINTERS,
1914.

LETTER OF TRANSMITTAL

Clemson College, S. C.
August 13, 1913.

Hon. J. E. Swearingen, State Superintendent of Education,
Columbia, S. C.

Dear Sir: We herewith submit through your hands to the representatives of the State of South Carolina, as required by law, this, the twenty-fourth annual report of the Board of Trustees of the Clemson Agricultural College of South Carolina.

We wish to state that it contains many facts showing the progress of the institution which are very gratifying to us, and we feel sure that it will give to you some gratification to see the fine condition of affairs the College is in, and to see by this report that the College is continuing upon its career of usefulness.

Very sincerely and respectfully,

(Signed) ALAN JOHNSTONE.

The Twenty-Fourth Annual Report of the Board of Trustees of the Clemson Agricultural College of South Carolina.

Clemson College, S. C., August 13, 1913.

To the General Assembly of the State of South Carolina.

Gentlemen: In obedience to the law we herewith submit the report of the President of Clemson College, made to the Board of Trustees, together with the reports of the several departments of the College, made to the President; and, also, the report of the Treasurer of the College, constituting the work, collections and expenditures of the College for the year beginning July 1st, 1912, and ending on the 30th day of June, 1913.

The Board of Trustees is gratified to be able to state that the last year of the activities of the College has been one of the best years since its beginning, and we feel sure that the College is going forward each year more fully accomplishing the purpose for which it was established.

Cordial relations exist between the President of the College, the Board of Trustees and every department of the work. The health and discipline of the student body, their religious and moral training have met with approval in a very marked degree.

The fact that the student body numbered over eight hundred (800) must of itself speak for efficient and satisfactory services that it is giving to the people of the State. The one-year agricultural course has proven a real success; fully fifty per cent. of the student body were taking the agricultural courses in the institution, and more than half of the graduating class for the last session were graduates from the agricultural department.

The department of the Pee Dee Station for experimental work in Florence County has necessarily caused the outlay of a great deal of money, time and labor, but we are pleased to say that it is moving forward to become one of the great departments in the agricultural development of our experimental work.

The fertilizer tax, from which the College derives its chief source of income, has fallen off very much in receipts during the last two years; last year it was only $230,500.00. By a compari-

son of the expenditures of the College for college work and for public service, it will readily be seen that this amount of money is scarcely sufficient to do what the law requires to be done, and what the Board of Trustees are very anxious to have done. We wish, however, to call the attention of the representatives to the fact that no new work can be placed upon the College by legislative enactment, unless funds are provided to carry on the additional work by direct appropriation. We do not wish to call upon the General Assembly for an appropriation to conduct the affairs of the College, nor the public work, if it can possibly be carried on without such an appropriation. And we, therefore, in advance of such emergency, are calling the attention of the General Assembly to this fact.

We beg to say, in conclusion, that the President of the College and his faculty are carrying on a great work for the State of South Carolina, and the Board of Trustees wishes, in this connection, to bespeak the kindly co-operation and sympathy of the representatives of the people for this band of workers in their arduous duties.

Most respectfully,

(Signed) ALAN JOHNSTONE.

Report of the President of the College.

(W. M. Riggs)

Clemson College, S. C.
September 1, 1913.

Hon. Alan Johnstone, President the Board of Trustees of the Clemson Agricultural College of South Carolina.

Dear Sir: I have the honor to submit herewith the President's Annual Report covering the twentieth session of the Clemson Agricultural College. This is intended as the basis for your twenty-fourth Annual Report to the Legislature.

The report covers the fiscal year from July 1, 1912, to June 30, 1913.

I have arranged the report in seven main divisions as follows:

(1) *A General Statement*, (2) *A Fiscal Statement*, (3) *The Collegiate Work*, (4) *The Public Service*, (5) *The South Carolina Experiment Station*, (6) *The Student Life and Interests*. (7) *The Outlook*.

PART I. GENERAL STATEMENT.

The session of 1912-1913 was one of the most important, and, in the opinion of most of the faculty, the most efficient and satisfactory in the history of the College.

During this session the enrollment was 834. Of this number, 820 were from South Carolina, and 14 from other States.

The graduates numbered 74. Thirty-five of these were in the Agricultural Courses and 39 in all other courses.

In addition, 38 received certificates for completion of the One Year Agricultural Course and three for the completion of the Work-Boy Course in Agriculture.

Of the total number of students enrolled 50.3 per cent. were in the Agricultural Courses; 41.2 per cent. in the Engineering and other courses, and 8.5 per cent. in the Preparatory Course.

Among the principal achievements of the year may be mentioned:—

(a) The successful inauguration of the One Year Agricultural Course.

(b) The design and adoption of new curriculums for all of the Bachelor-of-Science Courses.

(c) The development of the Pee Dee Branch Experiment Station. Because of lack of funds very little building or equipping could be done.

New Legislation:

Comparatively little legislation bearing upon the interest of the College was enacted by the last General Assembly. The following Acts became law:

(1) An Act to regulate the apportioning of scholarships in the Clemson Agricultural College.

The only effect of this Act is to give to Jasper County its quota of scholarships under the general scholarship law.

(2) An Act to simplify the method of selecting candidates for the One Year Agricultural Course.

Heretofore, only young men who were recommended by the Farmers' Union or some other agricultural organization, under the provision of the Mims Bill, could compete for the scholarships. The change in the law abolishes this restriction, and permits of *any* young man, over eighteen years of age, entering the competition.

(3) An Act to require Clemson College to furnish hog cholera serum *at cost* to the citizens of the State.

This Act merely legalizes the present policy of the College, which is to distribute serum at cost.

Board Meetings:

During the fiscal year under consideration the Board of Trustees held four meetings as follows:

The regular semi-annual meetings in July, 1912, and March, 1913; a called meeting in Columbia October 29, 1912, and a meeting at the College on June 10, 1913, which, in accordance with a revision in the By-laws, takes the place of the regular July meeting.

The Legislative Committee:

The Legislative Committee, appointed to visit annually and investigate the condition of the State educational institutions, inspected the College in January, 1913, and was given the fullest opportunity to examine into the workings of the institution.

The committee was composed of Senator Niels Christensen, of Beaufort, and Representatives Erckmann, of Charleston, and Osborne, of Spartanburg. Their report has already been filed with the General Assembly. The tenor of the report is contained in the following sentence:—

"The work of all departments of the institution is well systematized, and is a model for other State institutions."

This is praise, indeed!

The Board of Visitors:

The Board of Visitors consists of one representative from each Congressional District, appointed by the Board of Trustees, to hold office for two years. This committee met at the College about May 1st, and spent several days in going through the departments, and making as full study as their time would permit.

The following is a personnel of the Board:
First District—Mr. J. Elmore Martin, Charleston.
Second District—Mr. William T. Walton, Johnston.
Third District—Mr. J. J. Ballenger, Seneca.
Fourth District—Mr. Thomas F. Parker, Greenville.
Fifth District—Senator G. K. Laney, Chesterfield.
Sixth District—Mr. David R. Coker, Hartsville.
Seventh District—Judge R. O. Purdy, Sumter.

The Board organized at its 1912 meeting by the election of Judge Purdy as Chairman and Mr. Coker as Secretary.

The high standing of the men composing the Board of Visitors guaranteed a helpful report on all phases of the College work, and especially in regard to its agricultural development. Their report in full is attached hereto and made a part of this document. In the closing paragraph of their report, the Board of Visitors says:

"We feel that the College is doing a splendid and increasingly efficient work."

Inspection by the War Department:

On April 13 Captain Schindle made the annual inspection of the corps of cadets. At the time of this writing his official report has not been received. However, the officer commented most favorably on the discipline and general good conduct and ap pearance of the cadets.

Convention of County Superintendents of Education:

The County Superintendents held their second annual meeting as the guests of the College May 13th and 14th. We are dependent upon the County Superintendents for the conduct of our scholarship and entrance examinations, held at the county seats, and upon them largely for the enrollment of boys in the Corn Club Work. These and other subjects were fully discussed and a thorough understanding arrived at.

The proposition of our Extension and Demonstration Division to organize a five-acre farm in connection with five schools in each county, the farm work to be supervised by the County Demonstration Agent, met with a most favorable reception by the County Superintendents.

The meeting of the Demonstration Agents, which usually is held at the College at the same time as the meeting of the County Superintendents, was this year held at the National Corn Exposition instead.

Relations of President and Board of Trustees:

It gives me pleasure to testify to a continuation of the cordial relations existing between the Board of Trustees and the President of the College. That mutual confidence and sympathy so essential to the success of the institution have in no way abated since my last annual report.

I make special grateful acknowledgment of the assistance rendered me by the President of the Board, the Hon. Alan Johnstone.

Deaths on the Board of Trustees:

During the year covered by this report, death has taken from the Board of Trustees one life and one elected member.

Only a few days after the adjournment of the July, 1912, meeting Col. R. W. Simpson died at a sanitarium in Atlanta. He it was who drew Mr. Clemson's will donating his property to the State. He was one of the seven Life Trustees mentioned in the will, and from its organization until July 9th, 1907, was Chairman of the Board.

However much the Presidents of the College and his fellow Trustees may have differed with him on questions of judgment, all will admit his rugged sincerity and his genuine love for an

institution whose birth he witnessed, and to whose service he gave unsparingly of his time and talents. His was a service that money cannot buy, or even public inappreciation alienate!

Men may differ in judgment as to what is best for an interest which they mutually love and serve, and sometimes honest disagreement is mistaken for intolerance. Yet out of the earnestness of debate and sincere difference of opinion have come those wise judgments which have made Clemson College the great institution it is today.

Judged in the light of his sincere devotion, his unswerving loyalty, and his untiring efforts, Colonel Simpson's work for this College must ever stand as an example of patriotic service with few parallels in the history of South Carolina.

On April 10, Mr. W. D. Evans, since November 6, 1901, an elected Trustee, died at his home in Cheraw.

Mr. Evans took an active part in the movement to establish an Agricultural College. He was one of the most experienced, useful and active of the Trustees. His loss will be greatly felt. For many years he had been Chairman of the Fertilizer Board of Control, the Veterinary Committee and the Entomological Committee, recently known under the law as the Crop Pest Commission. These Committees have oversight of much of the work required by legislative enactment, and to their service Mr. Evans gave generously of his time and ability. It can be said truthfully that no member of the Board served more faithfully or had greater hopes for Clemson's future greatness than Mr. Evans.

PART II. A FISCAL STATEMENT.

The Treasurer's annual report, which is appended, gives detailed information in regard to the finances of the College during the year July 1, 1912, to June 30, 1913.

In addition to the summarized report attached, the Legislature is furnished with a special report containing not only the summary, but a list showing *every bill* paid by the Treasurer out of College funds.

For purposes of discussion, a condensed summary of resources and expenditures is given below:

RESOURCES, 1912-1913.

Dr.		
Balance brought forward June 30, 1912		$ 4,937 51
Income.		
Privilege tax on fertilizers	$231,500 00	
Morrill & Nelson funds (U. S.)	25,000 00	
Interest on landscript (U. S.)	5,754 00	
Tuition from cadets	5,050 00	
Interest on Clemson bequest	3,512 36	
Sales, interest, rents, etc	8,994 46	$279,810 82
Total		$284,748 33

The above total of our resources (how much smaller than the public think it is!) represents every cent that is available for the use of the College, including its local development and its Public Service. The South Carolina Experiment Station receives $30,000.00 from the United States Department of Agriculture for conducting agricultural experiments, but none of this money can be used by the College. The Experiment Station is financially a separate institution.

The money paid in by students for board, laundry, heat, light and water, medical attention and incidentals, is held in trust by the College for the use of the cadets, and not one cent is available for financing the College.

The Experiment Station and Cadet Fund appear elsewhere in this report.

EXPENDITURES 1912-1913.

1. For operating expenses of College (salaries of teachers, laborers, insurance, coal, shop and laboratory materials, etc.)	$147,682 22	
2. For buildings and permanent improvements to shop and laboratory equipment	23,711 25	
3. Public work (fertilizer inspection and analysis, veterinary inspection, tick eradication, scholarship, etc., etc.)	100,889 94	
Total		$272,283 41

It will be noted under the head of Resources that the fertilizer tax reached only $231,500—nearly $34,000 less than the high water mark of 1910-1911.

For a number of years—up to the past two years—our fertilizer tax has always been greater than it was the year before. As a consequence, we have every year increased our appropriations for Public Service. For many years our income kept climbing to a level higher than was expected, until in the fiscal year of 1910-1911 it reached its maximum at nearly $265,000. We ended that year with a balance in bank of nearly $54,000, and blessed our good fortune that at last we had a capital sufficient to tide us over the dry months when fertilizers are not selling. With confidence that history would repeat itself, and the tax *not recede* but still increase, we set to work at the July meeting, 1911, to plan our State Work, including the buying of the Pee Dee Station, upon our new and higher level. The expenditures for College purposes were not materially increased.

But the tax that next year, 1911-1912, fell to $221,000—nearly $44,000 less than the previous year—and in order to carry on the work ordered, and, in addition, purchase the Pee Dee property, we had to fall back on the balance brought forward from the year before. As a result, we closed the year 1911-1912 with less than $5,000 on hand.

Believing that the depression was merely temporary, we built our hopes for 1912-'13 on a fertilizer tax of $250,000 or over. Again we have been disappointed, for, as before stated, the tax this year is considerably less than the amount assumed.

In order to avoid a deficit we had to cancel or defer from the budget of expenditures authorized by the Board items amounting to $25,536.48. This cut was practically equal on each of the headings of expenditures listed above. By still further reductions we were able to close the year with much needed work undone, but with a small balance of $12,464.92 to help tide us over the months when fertilizers are not selling, and no inspection tax money coming in. The actual reduction in the 1912-'13 budget was $38,001.40, distributed as follows:

1. On Public State Work	$21,045 28	
2. Operation of College	8,460 06	
3. Building and Equipment	8,496 06	
Total reduction		$38,001 40

We might as well, I think, put behind us dreams of another year equal to 1910-'11. I believe that $230,000 is near to the safe level of the fertilizer tax, and we must plan our work and development accordingly. I do not believe that it is going much beyond that figure. It may even recede, as our farmers follow more and more the advice of our agricultural experts to grow leguminous crops and feed cattle, and to use the higher grade of commercial fertilizers, thus cutting down the tonnage needed.

However economically the College may be administered, its operating expenses will likely be around the $150,000 mark, with a tendency to increase as the College grows and offers more and better opportunities to its students. I believe that the running expenses have reached practically an "irreducible minimum," below which we cannot materially fall without some sacrifice of efficiency. In addition to the necessary running expenses, at least $25,000 annually will be needed for some time to come for buildings and equipment of shops and laboratories.

We must, therefore, turn to a consideration of the Public State Work, some of which is required by law, and some undertaken on our own initiative. This work has progressed in magnitude by the following leaps:

Fiscal Year.	Privilege Tax.	Cost of Public Service Work.
1907-1908	$168,115 28	$ 56,366 12
1908-1909	177,271 74	64,389 79
1909-1910	226,980 96	65,457 95
1910-1911	264,374 08	81,598 09
1911-1912	221,000 00	106,886 55
1912-1913	231,500 00	100,889 94

In six years the Public Work has increased $44,523.82. I do not regret this. I only wish we could maintain the pace and increase it—but can we?

In my judgment, we must face one of two alternatives unless we are willing to see retarded the proper growth and building of the College—we must reduce our expenditures for State Work, or we must go to the Legislature for appropriations to carry on at least the police work and the scholarships, which together, and *not including the Fertilizer Inspection and Analysis,* now cost

us over $35,000. In a few cases we can perhaps slightly reduce our expenditures along present lines of public service without abandoning them, but that will not adequately meet the situation. *Unless the fertilizer tax increases*, we will be compelled eventually to turn to the Legislature, *not to provide for the College,* but for assistance in the doing of that work, which, however properly the College should *administer*, cannot much longer be paid for out of its current funds.

The Act which gave to the College the balance of the fertilizer tax over and above the cost of Inspection and Analysis, expressly gave it to "*build and maintain a College*," and this obligation must, in my judgment, take precedence over hog cholera work, or veterinary inspection, or branch stations, or any and all of those activities which, however desirable, are secondary to our principal purpose and our sacred trust.

There is no limit to the demands of the people for free service, and I wish that a $500,000 fertilizer tax would enable us to meet all reasonable demands.

I believe we should give to the Legislature the opportunity to provide for some of the work that we have been doing rather than abandon it, when the time comes that we can no longer carry the financial burden, except at the risk of strangling the College and preventing its growth into that great educational plant it ought to become, and which the people will demand for their children. I think we ought to begin now to sound the warning. During the past year, because we were short of money, we had to turn down some of the least urgent calls for veterinary service. It is because we never have failed to respond to calls for assistance that our people have come to think that our resources are inexhaustible.

It is not practicable with our present income to undertake additional lines of Public Service. If additional work is required of us by the Legislature, an appropriation must be made to cover the cost, or else the new work must be substituted for some that we are now doing. However great our inclination to still further extend the usefulness of the College and carry it to our people, we must of necessity call a halt until a larger financial support is in sight. The same applies to any extension of the College work.

In this connection, it may not be amiss to remind you that for nineteen years past the Legislature of South Carolina has not

been asked for, nor has it appropriated, one dollar to the support of Clemson College or its Public Service. The College has been only too glad to serve its people to the very limit of financial ability, without calling for aid from the State Treasury.

The idea that is prevalent that Clemson College spends more money than is justified is not tenable upon an examination of the records, and so far as the cost per student for education, the cost is probably as low or lower at Clemson than at any other Agricultural and Mechanical College in the nation.

We need many things to round out the equipment of the College and increase its usefulness.

We need a gymnasium and a new hospital, as I have stated in my previous reports, and is emphasized in reports of the Board of Health, Legislative Committees and Board of Visitors. We need to establish a Division of Poultry Husbandry, and add mule and horse barns to our Animal Husbandry Division. We need to give training in Agricultural Pedagogy and in Business Law. But all these things cost money, and that we lack.

Upon this subject the Board of Visitors say in their last report:

"We regret to learn that the revenues of the College for the past year have shown practically no gain over the preceding year, and we believe that the Board should go to the Legislature and ask for funds for the construction of a gymnasium building, and possibly for other needed improvements, if the revenues of the institution do not promptly warrant their construction out of the regular income."

PART III. THE COLLEGE WORK.

Enrollment and Classification:

The enrollment for the session 1912-1913 by classes was as follows:

Seniors	76
Juniors	90
Sophomores	201
Freshmen	290
One Year Agricultural Course	59
Short, Special and Irregular and Work-Boy Courses	48
Preparatory	70
Total	834

Of this total, 170 were Agricultural scholarship students and 22 were Textile scholarship students. Of the total enrollment in the College classes 50.3% were in the Agricultural Courses. This is probably the largest per cent. of students taking full four-year Agricultural Courses in any Agricultural and Mechanical College in the United States.

The total enrollment of the College since its beginning has been 11,572 students, and the total number of graduates 934, distributed as follows:

In the Agricultural Courses	383
In the Mech.-Elec. Engineering Course	318
In the Civil Engineering Course	116
In the Chemistry and Geology Course	13
In the Course of Textile Industry	104
Total graduates	934
Total enrollment in all classes for 19 sessions	11,572

The education of the student body should be our first concern, as it is our primary obligation. However extensive and popular may be our Public Service, however great our material progress in buildings and equipment, unless the work of instruction is efficient, we are falling short of our great purpose and our sacred duty.

This being my view, you may well understand with what gratification I feel able to report upon the excellent conduct and splendid academic progress of the student body during this session.

The majority, if not all, of the faculty would, I am sure, agree with me in the opinion that this is the best session, viewed from *their* standpoint, in the history of the College.

The class work has been of a higher grade than heretofore. There have been fewer failures and fewer discouraged students. Better discipline and quiet in the barracks during study hours have prevailed. There has been very little dissipation of any kind, and a generally better tone is apparent in the student body.

The primary cause of this improvement lies in the efficiency of our Commandant, Col. J. M. Cummins.

At a college like Clemson, the military discipline is at the base of all the other college work. If it is weak and inefficient, the

spirit of inefficiency infects every class room, and is apparent in every other duty, and, conversely, if strong and efficiently administered, its good effect is reflected in every recitation, and is apparent in the attitude and bearing of the students. Promptness, neatness, accuracy, proper preparedness and a cheerful spirit of obedience make up the accompaniment of good discipline, while laxness in every line goes hand in hand with lax discipline. The Commandant's work is fundamental to all the other College work.

And so I would characterize as the greatest achievement of the present session and the one upon which the many other improvements to be mentioned are predicated—not numbers—although this year we have a higher enrollment than ever before—not additions to our plant or to our force of teachers and officers—but the better discipline, with its resultant better class work, better development of the individual, and better living conditions—in short, a greater efficiency in those features of the College work, less visible, but more important than its most imposing buildings.

In marked contrast to the admirable conditions here have been those existing at some of our other Southern Colleges. At the University of Mississippi, the student body, faculty and Trustees have been divided into hostile camps over the question of the abolition of the secret Greek letter fraternities. At the University of Kentucky, athletic conditions have been the cause of contention, so serious as to culminate in the burning of one of the College offices. At the Mississippi Agricultural and Mechanical College, practically the entire student body left the institution because of strife between the new President and the faculty, on the one side, and the student body on the other. At the Agricultural and Mechanical College of Texas, 406 students were dismissed because of insubordination following the dismissal of twenty-seven of their number for hazing.

All of the improvement in discipline at Clemson has not come about without an occasional note of discontent, but these momentary discords grow inaudible in the general hum of progress. They usually come from those who need disciplinary training most.

The Faculty:

The work of the Faculty as a whole has been very good. We have had fewer resignations than I can ever remember in the

same length of time. An increasing spirit of optimism and loyalty seems to prevail.

Generally speaking, the Faculty is strong and efficient—with a few weak places, inevitable, I suppose, in any organization of similar magnitude.

I have been placing more and more the responsibility for the academic work of the College upon the General Faculty. Some good constructive work has been done, and especially in connection with the new curricula which will be presented later.

Resignations:

As stated above, the College has, perhaps, suffered less from resignations during the year 1912-1913 than heretofore. This is primarily due to the raising of our salary scale in the Agricultural Department. The demand for trained agricultural teachers continues to exceed the supply, and hence a continual movement due to promotion.

The following resignations became effective during the year ending June 30:

In the Agricultural Department—T. F. Jackson, in Animal Husbandry (Extension Division); E. R. Lloyd, Jr., Assistant in Animal Husbandry; H. L. Simpson, Third Assistant State Veterinarian; C. B. Haddon, Special Agent in Charge of Boys' Corn Clubs; W. L. English, Superintendent of Extension and Demonstration Work; J. G. Hall, Associate Professor of Botany and Bacteriology; W. D. Garrison, Superintendent of the Coast Station.

In the Engineering Department—W. C. Wagner, Assistant Professor of Mechanical and Electrical Engineering; G. H. Folk, Instructor in Wood Work.

In the Textile Department—Fred Taylor, Assistant Professor of Carding and Spinning.

In the Military Department—S. L. Duckett, Military Assistant to the Commandant.

Appointments:

The following appointments to fill vacancies or new positions became effective during the year:

In the Agricultural Department—W. L. Hutchinson, Professor of Agronomy; R. L. Shields, Professor of Animal Husbandry and Dairying; W. W. Long, Superintendent of Extension and

Demonstration Work; C. F. Niven, Assistant in Horticulture (Extension Division); M. P. Somes, Assistant Professor of Botany and Bacteriology; M. L. Quigley, Second Assistant State Veterinarian; F. T. Wilson, Assistant Professor of Agronomy; O. M. Clark, Associate Professor of Horticulture; T. R. Risher, Assistant Chemist (Station); J. A. Goodwin, Superintendent Coast Station; H. L. Simpson, Third Assistant State Veterinarian; S. M. Gregg, Acting Superintendent Pee Dee Station; T. R. Haden, Assistant in Animal Husbandry (Station); W. E. Simonson, Third Assistant State Veterinarian; R. E. Currin, Superintendent Pee Dee Station.

In the Engineering Department—A. O. Horning, Instructor in Wood Work; D. W. Sylvester, Instructor in Forge Work; S. R. Rhodes, Assistant Professor Mechanical and Electrical Engineering.

In the Textile Department—W. R. Meadows, Assistant Professor of Carding and Spinning.

In the Military Department—T. P. Duckett, Military Assistant to the Commandant.

In the Chemical Department—W. T. Pearce, Instructor in Chemistry.

In the Dining Hall—Mrs. M. E. Middleton, as Matron.

Courses of Study:

The most important academic matter dealt with by the Faculty, and approved by your Board, has been the revision of the curriculums in all the regular degree courses. The revision consisted chiefly in increasing the time given to English and Political Economy in the Senior Classes, and increasing the Physics in the Sophomore and Junior Classes.

In order to allow more specialization to the Agricultural Seniors, the courses in Agriculture were made alike through the Junior year. In the Senior year group electives are allowed, consisting of one major and two minor subjects.

The seven major subjects are as follows:

Agronomy, Botany, Chemistry, Animal Husbandry, Entomology, Veterinary Science and Horticulture.

The new curriculums are published in detail in the College catalogue, and will not, therefore, be incorporated in this report.

I regard our courses as improved 25% by the changes that go into effect next session. At most, only two additional instructors will be needed to gain this advantage.

On May 31st we awarded certificates to thirty-eight men in the One Year Agricultural Course, and three to men who for two years had taken the Work-Boy Course.

The One Year Agricultural Course is unquestionably the most significant and unqualified success of the session. The character of the students who took this course and the work they accomplished guarantee its future success.

Regarding the One Year Course, the Board of Visitors says:

"We also find that the One Year students are doing excellent work, and that this course is filling a real need in the educational program of the State, and we recommend that everything possible be done to enlarge the attendance and increase the efficiency of this course."

The Work-Boy Course, in which, by working and studying alternately, a one-year course in Agriculture is completed, has not been altogether satisfactory, and is no longer necessary now that the One Year Course is well established. A limited number of boys who wish to do so may be given work on the Farm, and their savings applied to a one-year course the succeeding session.

The Agricultural Department:

The wisdom of the Board in combining into one Department and under one Director the Agricultural Department and the South Carolina Experiment Station, has been amply verified by the success attending the first full year of trial.

Of the work of the Department, Director Harper says in his report to me:

"During the year, extensive improvements have been made on the College Farm, in the horticultural grounds, and the animal husbandry interests have been considerably extended. The new dairy barn, which is considered the best one in the South, has been further equipped. Two new silos have been built and much improvement has been made in the way of fence building, etc.

"It gives me pleasure to report that this has been the most successful year that this Department has ever experienced. More real progressive work has been accomplished. The combination of the Agricultural Department with the Experiment Station has

been conducive to good results. Every man connected with both the Department and Experiment Station has done a good year's work, and all have been arduous in their endeavors in both teaching and in research work. The students taking the Agricultural Course have made more real advancement during this session than probably at any other period during the history of the College.

"During the year the curriculum has been considerably improved and broadened, and by the introduction of the elective courses in the Senior year we hope that the course will still be greatly improved. The graduates of this institution in the Agricultural Department are now in considerable demand in practically every State of the Union, and in foreign countries. Wherever they have gone they have rendered satisfactory service and reflected credit upon the institution. Those who have engaged in farming have been leaders in their communities, and have been most successful.

"One of the greatest movements inaugurated at this institution in years was the establishment of the One Year Course in Agriculture. The inauguration of this course was for the purpose of training men to go directly from the College to the Farm. The work of the students who took this course was eminently satisfactory. Forty-one completed the course. This One Year Course is not intended to prepare young men for teaching agriculture, as the time spent here is not sufficient to give all the scientific training necessary for this end, but the young men who took the course are well grounded in the scientific principles of agriculture, and they are fitted to become leaders in their community along all progressive agricultural lines."

The laboratories of the Department are in better shape than formerly. The Experiment Station Barn is being used as a farm machinery building.

The Department needs badly an adequate Farm Crop Laboratory. Perhaps this can be provided when we have a gymnasium building and can use the large room in the Agricultural building now used as a gymnasium for the purpose.

A Division of Poultry Husbandry should be provided for as soon as funds are available. A small plant merely large enough to form a nucleus for our Extension Workers, and a good, practical but thoroughly scientifically trained Poultryman would be

sufficient to start on. We could require the work to be self-supporting in a short while. Such a plant would naturally come under our Animal Husbandry Division.

In the development of our Horticultural Division, it is our purpose to develop the grounds on the Pendleton road, reserving the old location for the greenhouse and for landscape gardening work. In time we hope to see the hills to the left as you go towards Pendleton covered with orchards and nut tree groves. Such a setting would, indeed, be appropriate as an approach to the College. On the other side of the road will lie our truck garden.

The development of our Horticultural Division I regard as quite important, in view of the possibilities for fruit and truck growing in the State, and the lack of knowledge among our people as to the best varieties of fruits for South Carolina, and the proper manner of handling an orchard. Our orchard work as carried on by the Extension Division has proven one of our most popular lines of work.

As the Director of the combined Station and College interests, Director Harper has shown great zeal and energy, and the good results obtained speak to his credit.

The Farm:

The Farm is under the supervision of the Agricultural Department. It is our determination just as rapidly as funds will permit to make the College Farm a model in every way. To this end Director Harper has, during the year covered by this report, devoted much time and efficient attention. The Superintendent of the Farm, Mr. Brandon, is a Clemson graduate in Agriculture, and is a most acceptable man in the position.

Director Harper says of the Farm:

"The Farm Division has made most marked improvements during the year. Substantial fences have been built where necessary, and hundreds of stumps have been removed. Considerable land has been drained by ditches and ditch banks have been scraped down. A number of hillside gullies and washes have been stopped, and considerable waste land reclaimed. In spite of the unfavorable seasons during last summer and fall a good crop was made and the present prospects are for one of the best crops that have ever been made on the College Farm."

The Academic Department:

This Department embraces the subjects of Mathematics, English History and Physics, which subjects are required of all regular four-year students in College, regardless of their courses. The subject of bookkeeping is taught in the Division of Mathematics.

On the whole, the teachers in this department regard the work of this session as better than heretofore, and above the average.

There has been no change in the personnel of the Academic Department. The new curriculums increase by about one-third the time given in the Senior Classes to English and Political Economy and the time given to Physics in the Sophomore year. The Mathematical work is also slightly rearranged by increasing the time given to this subject in the Junior years, and reducing it in the Senior years of the Engineering and allied courses.

Because of the reduction in the size of the Preparatory Class and the large size of the Sophomore, the Preparatory teachers assisted with the Freshmen and One Year Courses. The course in Agricultural Arithmetic, given by Mr. Wells, and the course in Parliamentary Practice, given by Prof. Daniel, to the one-year men, are worthy of special commendation.

The Chemical Department:

The Chemical Department has well maintained its high standard for efficiency both in teaching and in the analysis of fertilizers. The teaching work in the Sophomore Class has been greatly strengthened by the addition to the staff of another instructor, thus making it possible to teach the class in smaller sections than heretofore. An additional class room has been provided and a commodious basement stock-room is in course of building.

The Engineering Department:

The Engineering Department continues to do excellent work. Prof. Earle says of the session:

"In many respects I think this is probably one of the best years we have ever had."

In this opinion I fully concur.

Quoting again from Prof. Earle's report:

"The first class to take up the Architectural Course began in September, numbering about ten men, who have seemed very much interested in their work. With the addition of the Architectural Work, we find ourselves rather hampered for room, and if our numbers increase in this work we will be compelled to make some arrangement to take care of this course.

"At the March meeting of the Board of Trustees there were a number of changes in the curriculum recommended to the Board and passed by them, to take effect next session. A number of changes have been made in the curriculum as given the One Year Agricultural men to better meet their needs. We are giving them work in horse shoeing, and their Wood Working Course is along practical lines that will be of special benefit to them on the farm. These changes in curriculum will, I believe, improve the efficiency greatly."

The Textile Department:

The capacity and efficiency of the Textile Department has been considerably increased by the installation of valuable donated machinery and rearrangement of equipment for greater convenience in teaching. The increase in the number of students selecting the Textile Course is gratifying. Ten men graduated in this course in June. Valuable instruction in Cotton Grading was given to 52 students of the regular One Year and Four Year Agricultural Courses.

Of the work of the Department, Prof. Doggett says:

"It is a pleasure to be able to report that my co-workers deserve much commendation for the faithfulness, energy and efficiency shown in carrying on the work of their respective divisions and for the hearty co-operation in everything pertaining to the Department.

"We have never had so many requests from the mills for our graduates as we have received this year, and we could have placed many more men than we had. It may be of interest to state that this year we graduated more men in the complete course in cotton manufacturing than any other Textile school, North or South.

"There is a movement on foot for the establishment of vocational or trade schools in the more important manufacturing centers of the State. As this Department has been very much interested in extending its influence to mill workers, and as this

contemplated educational movement merely asks for the moral support of the College, we trust that the College will lend its influence to this line of work. Aside from the benefit to the towns starting these schools, the College will gain by having several "feeders" of students interested in the many branches of technical education given here, and by having a number of teaching positions open to graduates of the Engineering as well as of the Textile Department."

The Military Department:

The Military Department has been unusually efficient. Elsewhere in this report I have referred to the excellent discipline under the administration of our new Commandant, Col. J. M. Cummins. The Board of Visitors thus comments on the military feature:

"We commend Colonel Cummins, the Commandant, for the marked improvement in the discipline and appearance of the student body."

The cadets are arranged into three battalions of four companies each. Instruction in Military Science and Tactics is given to meet the requirements of the Federal government that graduates be able in case of war "to take up the duties of company officers of volunteers of militia with the greatest benefit to themselves and to the nation." Military discipline is maintained in the barracks and elsewhere, in order that quiet necessary for study may prevail, and that the class work schedule of the College be dispatched with celerity and precision. Upon the efficiency of the Military Department depends very largely the general efficiency of the entire organization.

The week's encampment of the cadets at the State Fair in Columbia was creditable to the College and enjoyed by the cadets.

The Accounting Department:

The Accounting Department has maintained its high standard of efficiency.

Under the supervision of Dr. P. H. E. Sloan, Secretary-Treasurer, our financial administration has commanded the respect and confidence of the citizenship of the State. Connected with the College from its beginning, his reputation for honor and hon-

esty has been to the College an asset of incalculable value. In his twenty-four years of service no Auditing Committee or other supervisory authority has found anything to criticise in his methods or accuracy of handling the College business.

I wish to call your special attention to the exceptional quality of the work of Mr. S. W. Evans. Nowhere can be found a set of books superior in neatness, accuracy and intelligence to those kept by him—and not only that, but he has borne a large share of the responsibility of the management of the office and the planning and execution of all of its work. I am sure that Dr. Sloan will bear equally emphatic testimony as to the worth of Mr. Evans.

Of his excellent work the Legislative Committee says:

"The accounts are excellently kept and show in great detail and in comprehensive recapitulations the cost of all divisions of the work."

In July the books and accounts of the Treasurer will be audited by Mr. D. H. Wise, of Aiken, and his report will be attached hereto.

The summarized report of the Treasurer is also attached to this report, and an itemized report will be submitted to the General Assembly.

The Preparatory Class:

The Preparatory Class is open only to those country boys who are unable to get preparation at home for entrance to the Freshman Class. Boys who come from towns or from those country communities where reasonable school facilities are available are denied admission to this class.

The teaching has been done very acceptably by Prof. L. A. Sease, Head Master, and Mr. B. J. Wells, Assistant.

I look for this class to dwindle gradually as the One Year Agricultural Course gains strength, because many boys who are unprepared for the Freshman Class will take this shorter course.

The Library:

We have laid the foundation for a first-class Library, especially along technical and scientific lines. Already we have 17,592 bound volumes and over 9,000 pamphlets. The space occu-

pied by the Library has been more than doubled, and the reading room facilities greatly enhanced. A complete Library catalogue is now in progress.

The Library force consists of a Librarian and an Assistant, who instruct and encourage students to use the Library for technical as well as literary work.

Public Utilities:

Under this heading are included the work of Construction and Repair, Heat, Light and Water and Sewerage Systems, The College Printery, the Convicts and Campus and Roads. These represent, as it were, the municipal features of the College.

The Construction and Repair Division is under the supervision of Mr. Joseph Hewer. Prof. R. E. Lee is the Architect of the College. This Division is charged with the upkeep of all the buildings of the College property, and the erection of all but the more important public buildings.

The Heat, Light and Water Division, under the supervision of the Engineering Department, maintains the lighting and power service, furnishes the necessary steam for heating the barracks and College buildings, and operates the pumps that distribute the water supply, amounting to nearly 100;000 gallons daily. Water and light are furnished members of the faculty and charged for on a meter basis.

The College Printery, under the supervision of the Director of the Textile Department, is well equipped with a linotype, cylinder press and other standard apparatus. While most of the larger work of the College is done by outside printers, the College plant is a great convenience in getting out special forms needed in the College business. As an evidence of the work that can be done, it might be cited that the College catalogue is printed here.

The beauty of the campus has been greatly enhanced by the building of cement sidewalks and good roads. The College has no greater asset than its campus, and much more can well be expended in its development.

PART IV. THE PUBLIC WORK.

It has been stated elsewhere in this report that more than $100,000—more than two-fifths of the fertilizer tag tax—is expended for Public Work not directly contributory to the collegiate work of the institution.

For sake of emphasis the cost of the Public Work for the fiscal year which closed June 30, 1913, is here repeated as follows:

(1) Fertilizer Inspection and Analysis	$31,069 73
(2) Extension and Demonstration Work	17,751 82
(3) Agricultural and Textile Scholarships	20,002 89
(4) Cattle Tick Eradication	8,774 04
(5) Veterinary Inspection	5,090 52
(6) Crop Pest Commission	2,049 31
(7) Co-operative Experimental Work	3,105 92
(8) Branch Experiment Stations	10,028 48
(9) Miscellaneous	3,017 23
Total	$100,889 94

From the above it will appear that only $131,500.00 from the fertilizer tax was available for the building and operation of the College.

It is a great privilege to serve the people of the State, and the College appreciates its opportunity and ability to do this. The only regret is that the fertilizer tax is not $500,000 in order that the opportunity might be fully utilized. It is the well established policy of the administration to extend the Public Service just as rapidly as the increase of funds will permit.

1. *Fertilizer Inspection and Analysis:*

Stated reports of the Fertilizer Inspection and Analysis are appended to this report, and are most interesting documents. The actual sales amounted to 918,335 tons, and the tax receipts and penalties were $231,500.00—$32,874.08 less than for the high water mark of 1910-'11.

The work of the department was carried on by twelve inspectors and a chief inspector, who, in the discharge of their duty,

traveled over 38,000 miles, visited 1,697 depots and collected 2,411 samples of 1,129 different brands of fertilizers sold in the State.

During the year ending July 1, 1,928 samples were analyzed as compared with 1,698 samples for the previous year.

Of the 1,928 samples analyzed, 235 fell below the commercial value as shown by the guarantee, 114 of them fell below the 3% limit prescribed by law. Also, 389 samples fell below the guarantee in one or more constituents, the deficiency being made up, however, by an excess of other ingredients. Out of 1,631 samples of mixed fertilizers, phosphoric acid and cotton seed meal, 1,464 were of the grade claimed by the manufacturers, 189 were of a higher grade, and 21 were of a lower grade than was claimed.

It might be worthy of mention in passing that the 85% standard of availability for organic nitrogen required by the Department is higher than is required in any other State in the Union. Our Chemists are continually working to find the best methods of determining the availability of the organic nitrogen with a view of still further raising our standard.

The analytical work of the Chemical Department, under the supervision of Dr. Brackett, has been characterized by that care and accuracy for which it has become proverbial.

Mr. H. M. Stackhouse, Secretary of the Board of Control, is loyal to the farmers in protecting them against fraudulent fertilizers, and fair to the manufacturers whose large vested interests demand and deserve both honest and considerate treatment.

Mr. W. B. West, the Chief Inspector, having supervision of the work of the men in the field, has done his work with efficiency and enthusiasm.

A complete report of the Secretary and Chief Chemist is attached to and made a part of this report.

The cost of the work of Inspection and Analysis for the year was $31,069.73.

2. *Extension and Demonstration Work:*

In January, 1912, the College entered into a co-operative relation with the Knapp Demonstration forces in South Carolina, whereby the College was to contribute $10,000 annually and become a full partner in this work. A further step was taken by combining into one officer the State Agent of the Demonstration

Work and the Superintendent of the College Extension Division. By this combination the Extension force of the College became an expert backing for the Demonstration Work, supplying its one deficiency and bringing it into close and harmonious combination with the Agricultural College of the State. The College is expending from $18,000 to $23,000 annually in Extension and Demonstration lines.

Mr. Wm. Leslie English was the first appointed to the dual position at the head of these combined interests, and his energy, enthusiasm and efficiency from the start assured the success of the arrangement.

After a year's excellent work, Mr. English resigned to accept a lucrative position as Industrial Agent for the 'Frisco Railway System.

Mr. W. W. Long, of the Washington office, Field Agent for Virginia and North Carolina, was elected to succeed him. He took charge of the work in April of this year.

Mr. Long is an able man, consecrated to the needs and interests of the agricultural people. A "charter member" in the demonstration work, he was trained under the great originator himself, Dr. Seaman A. Knapp.

Mr. Long has entered vigorously upon the work in this State, bringing to bear upon it his ripe experience and great ability as an organizer and handler of men.

He has magnified many-fold the importance of the county agent by making him the representative of the experts in the Extension Division and the Experiment Station.

These agents are now assisting in the distribution of the hog cholera serum, the spraying of orchards, and milk production tests. They are helping to educate the people to the importance of cattle tick eradication. They are interesting the people on the farm in sanitation and fly extermination. In educational matters they are disseminating information in regard to agricultural education at Clemson College and in the schools.

In Agriculture, they are going from farm to farm teaching the best methods of cultivation, fertilization and rotation, the use of live stock and legumes to increase the fertility of the soil. Special attention has been given to cover crops. As a result of this, last winter 13,000 acres of cover crops were sown—2,500 of which were in vetch and clover.

Next year five schools in each county will be selected, and a five-acre farm operated in connection with the school, under the joint supervision of the teacher and the Demonstration Agent.

Of this plan, Mr. Long says:

"I have selected only five schools for each county, as I did not wish to place too great a burden on the local agent. I believe these demonstrations will arouse such an interest among the teachers of the rural schools that some idea of this character will be worked out for the entire school system. We know it has been impossible to interest the average Southern country boy attending rural schools by teaching him agriculture from text-books, for his home surroundings have been of such a character that agriculture has not appealed to him, so we must show him what soil, intelligently managed, can be made to produce."

Mr. Long has also made a change of policy in regard to conducting Farmers' Institutes. He outlines his ideas along this line as follows:

"The Institutes as conducted in the past throughout the country have not been as successful in reaching the farmer as we had hoped. The meetings in the courthouse towns have simply been attended by curiosity seekers, business men, and a sprinkling of a few farmers. Therefore, I have determined to hold the meetings in the country and upon the farm of some prominent farmer who is interested in our work. I want to have these meetings as practical as possible. The live stock man could utilize the live stock on the farm; the field crop man could have before him the growing field crops, etc."

* * * * * * *

"There will be four parties in different counties of the State, consisting of three speakers to a party. In this way I hope to cover the entire State within thirty days so that the Institute workers can have some little time for their vacation before the fall work in the College begins. I shall devote two days to each county. This method meets with the approval of all with whom it has been discussed." * * * * * *

In the end, the success of the Demonstration and Extension Work depends upon the quality of men who make up the field force. While it is our intention as rapidly as possible to secure men of thorough scientific training, yet, after all, consecration and personality count for more than mere scientific attainments.

We need trained men with the missionary spirit, who, fired with zeal to help their fellows, will go out to improve those many adverse conditions—sanitary, educational and agricultural—which will continually confront them in the homes of our agricultural people. The position of County Demonstration Agent is fraught with untold possibilities for service, and the need is for men who are seeking to lift up, and who find their compensation in the good they can do as well as in the salary they receive.

And so the greatest task in this work is to find men for the positions on the "firing line"—men full of energy and zeal for service, men tactful in dealing with ignorance and prejudice, patient in the face of failure and misunderstanding. We need men with an eye single to the work and the good that can be done —not to the credit to be received. Such men are successful in any sphere of business, and the Demonstration Work cannot pay in money their worth on the market. Such men will count the satisfaction that comes from helping others as additional to the salary, and then, indeed, can we command the highest talent because we can pay the largest compensation.

3. *Agricultural and Textile Scholarships:*

In obedience to law, the College maintains 168 four-year scholarships in Agriculture and Textile Engineering, and fifty-one one-year scholarships in Agriculture for young farmers over eighteen years of age.

No appropriation is made to cover the cost of these scholarships, now amounting to over $22,000. The cost comes out of the current income to the College from the fertilizer tax.

The law governing the award of the One Year Agricultural scholarships was wisely amended at the 1913 session of the General Assembly by revoking that provision which required an applicant to be recommended by some farmers' organizations before he was eligible to win a scholarship.

During the year covered by this report, the College maintained 134 four-year scholarships in Agriculture, 22 in Textile Engineering, and 36 in the One Year Agriculture Course, a total of 192. Of this total 139, over 72% were held by farmers' sons, and 53 or 28% by sons of clerks, traders, merchants, ministers, etc.

4. *Cattle Tick Eradication:*

Up to March of this year, the work of tick eradication has been carried on by equal contributions from the United States Department of Agriculture and the College, without the help of the county for whose benefit the work was undertaken.

At its March meeting, and because of shortage in the funds available from the College Treasury, the State Veterinary Committee decided to require each county to put up $420.00 as a condition to eradication work in that county, the College and the Federal authorities to put up each an equal amount. Newberry, Fairfield, Chesterfield, Kershaw, Lee and Florence counties have accepted this proposition, and work is proceeding in those counties. Under the State law, the county is permitted to use $100 from county funds, leaving only $320 to be raised by private contributions.

The work of the year has been quite satisfactory. The following is quoted from the State Veterinarian's report:

"Since submitting my previous report, over 1,400 square miles have been sufficiently freed from ticks to justify the release of this area from Federal Quarantine. On March 1, 1913, the United States Department of Agriculture released from Federal Quarantine the counties of Marlboro, Darlington, York and that portion of Lancaster county north of Waxhaw creek, and all of Chester county north of the Lancaster and Chester Railway, and west of the Southern Railway. This makes a total of over 8,700 square miles released from Federal Quarantine since 1907 when we began the work of tick eradication."

The cost of this work to the College during 1912-'13 was $8,774.04. Altogether, the College has expended over $44,000.00 in eradication work during the years the work has been in progress.

5. *State Veterinary Inspection:*

Dr. M. R. Powers, head of the Veterinary Division of the Agricultural Department, is also State Veterinarian, charged with the enforcement of the State Veterinary and Quarantine laws. With his Assistants, Doctors Feeley, Quigley and Simonson, he has done valuable work in controlling contagious outbreaks, as well as in protecting our people against the purchase of diseased live stock.

The report of the State Veterinarian, which is attached to and made a part of this report, is quite interesting, especially that portion dealing with the use of the hog cholera serum. In regard to this matter, I quote the following paragraph:

"This disease is still prevalent. * * * Our serum has given very satisfactory results, as shown by attached pamphlet in which reports on its use have been compiled. Since the establishment of our serum plant, we have been able, with a few exceptions, to fill all orders for serum.

"During the period covered by this report, 134,625 cc. (approximately 6,732 doses) of tested anti-hog cholera serum have been produced by this Division. With the exception of 30,000 cc., now on hand, this amount of serum has been distributed to citizens of the State at cost of production, 2 cents per cc."

If a more abundant and cheaper supply of hogs can be secured next year, the Veterinarian hopes to reduce the cost of the serum to 1½ cents per cc., about 20 cents per hog of average size.

A bill was introduced at the last session of the General Assembly requiring the College to give away the serum free of charge. Fortunately, this bill did not pass. Free distribution of serum is open to two serious objections. In the first place the supply would be limited by the amount of money that the College had to put into this particular line of work. In the second place, any reasonable supply would be speedily exhausted because the serum would be called for by farmers whose hogs were in no immediate danger. Some charge is necessary as a test of earnestness and of need, if nothing more.

So long as the College is allowed to charge the user the cost of producing the serum, there is no limit put upon its manufacture and distribution, and only those in real need will likely call for it. The College furnishes the necessary directions and loans the necessary instruments so that the owner can easily inject his own herd, thus saving the delay that might occur on account of no College Veterinarian being immediately available.

The County Demonstration Agents are rendering very valuable assistance by teaching farmers proper methods of sanitation to prevent the income or spread of cholera, and by assisting them in getting the serum and injecting it.

The immunity due to the serum is not permanent, but if it is used in time, from 90 per cent. to 95 per cent. of the hogs injected can be saved.

Regarding the present method of distributing the serum at cost, the Board of Visitors says:

"We commend the plan adopted for the manufacture and distribution of hog cholera serum, through which an adequate supply has been assured for distribution at cost to the farmers. We feel that if the Farm Demonstration Agents in each county do their duty in advising the farmers that they can always get the serum and will co-operate with them in administering it, the hog cholera situation will have been practically solved."

The Act of the General Assembly, which requires that all shipments of cattle, mules and horses be accompanied by a health certificate, issued by some authorized State Veterinarian, is most important. Practically every State in the Union has such a law, and but for this protection, South Carolina would speedily become a dumping ground for diseased animals which could not be sold elsewhere. It is to be regretted that so many of our people misunderstand the purpose of this law and fail to see the necessity of it. No greater misfortune could befall the animal industry of the State than to have the present laws repealed or modified in favor of unscrupulous dealers.

The extent of cattle importation into the State is shown by the following figures taken from the State Veterinarian's report:

Horses and mules	15,129
Cattle for breeding	2,420
Cattle for breeding and dairy	144
Hogs for breeding	335

The cost of the Veterinary Inspection during the past year was $5,090.52.

6. *Crop Pest Commission:*

The first report of the State Entomologist, Prof. A. F. Conradi, and the State Pathologist, Prof. H. W. Barre, under the provisions of the new law creating the Crop Pest Commission, is attached hereto. It is a most interesting, complete and instructive document.

The report shows that during the year, 12,107 nursery tags were issued to nurseries in seventeen States shipping nursery stock into South Carolina. Nine State nurseries were inspected and certified to.

Special attention is directed to the full discussion of cotton anthracnose and the mistake made by a number of farmers last year of buying infected seed. It is pointed out that this State is a pioneer in seeking to protect its farmers against infected seed, and their hearty co-operation is essential and desired.

During the past year, permits for the sale of 20,000 bushels of seed from South Carolina seedsmen were issued.

Dr. R. H. Timmerman, of Batesburg, is Chairman of this Committee.

The cost of the work of the Crop Pest Commission during the past year was $2,049.31.

7. *Co-Operative Experimental Work:*

Two years ago a new line of public service was inaugurated by the Experiment Station in the Co-Operative Experimental Work with farmers. By this means, experiments which are conducted at the parent Experiment Station at the College are repeated on many farms scattered throughout the State. In this way, instead of a single answer every season, the Experiment Station is able to obtain numerous answers to the same question which must be asked of nature. Not only is the work of the Experiment Station forwarded, but the farmer learns by experiments on his own soil what is most needful and suitable.

The cost of this work was $3,105.92.

8. *Branch Experiment Stations:*

It is the purpose of the College to have three Experiment and Demonstration Stations in addition to the Parent Station at Clemson. One is already located in the coastal plain, one is now building in the Pee Dee Section in Florence, and another is later to be established in the Sand Hill Section of the State. Since the Station at Clemson is representative of the red clay lands of the Piedmont, it is expected that the four Stations will be fully representative of the soil and climatic conditions of the State. To multiply these Stations unduly would be too expensive, and would dissipate the energies of our Experiment Station staff.

The Pee Dee Station, consisting of 200 acres of land just on the outside the town of Florence, and valued at $40,000, has been developed as rapidly as funds could be spared for the purpose. Mr. R. E. Currin, one of the most successful of the County Demonstration Agents, and a successful Pee Dee farmer, was selected

as Superintendent. He assumed charge on December 1, 1912. Under his management, the plans of the Director, Prof. Harper, have gone forward very satisfactorily. A substantial barn, laborers' houses and necessary farm outhouses have been built. Crops have been planted and valuable experiments inaugurated. It is expected to devote fifty acres to experimental work, and the other one hundred and fifty to raising crops to support the Station, at the same time illustrating the best methods of cultivation, fertilization and rotation.

In the past two years about $30,000 have been devoted to this project.

Regarding the work of the Coast Station at "Drainland," Director Harper writes:

"The work of the Coast Station continues to render valuable services to the people of the lower section of the State. The drainage system has been everything that we could have desired. Splendid crops are being obtained, and the results from the experiments that have been conducted there have been far-reaching in their value, not only to the people of this State, but to all of the farmers of the Coastal region. The work of this Station will be published as a bulletin, giving the detailed results of the experiments."

Not including the salary of the Superintendent, the Coast Station is now on a self-supporting basis, despite the fact that some of the best land is used for experimental work.

9. *Miscellaneous:*

In addition to the principal lines of public service already enumerated and described, the College, under the State law, manufactures and sells at cost State flags—a suitable equipment to comply with the law having been installed in the Textile Department.

The College made an exhibit at the State Fair and also at the National Corn Exposition. These exhibits, together with the encampment of the cadets at the State Fair, cost the College about $1,500.

PART V. THE SOUTH CAROLINA EXPERIMENT STATION.

The report of the College work would be incomplete without reference to the excellent work done by the South Carolina Experiment Station. I do not believe that any Department of the College deserves more praise for the progress made during the past five years. Director Harper and his colleagues have been diligent and enthusiastic, and have substantial results to show for their labors. The Experiment Station Farm is in splendid condition.

The combination of the Station with the Agricultural Department has in no wise weakened the former, but rather given it a greater opportunity for usefulness.

At my request, Prof. Harper has prepared a brief statement covering the work of the Experiment Station, which is hereto attached. I commend this to you as one of the most interesting features of this report.

The Station officers answer thousands of letters from farmers asking for specific information, assist the Extension Division in issuing popular bulletins, and aid at Farmers' Institutes and in the Demonstration Work.

Important co-operative work is being conducted with the National Department of Agriculture. This work includes the testing of forage crops and leguminous crops in the different sections of the State, working out of the life history of some of the most injurious cotton and corn insects, developing varieties of cotton which will resist the cotton wilt disease, and making a plant disease survey of the State.

The cost of the Experiment Station is borne entirely by the Federal government, for which reason the expenditures are not included along with those of the other departments of the College.

Last year the resources of the Station amounted to $30,000.00 from the Hatch and Adams funds of the United States Department of Agriculture, and $3,745.84 from sales, a total of $33,-745.84, and the expenditures $33,599.01.

PART VI. THE STUDENT INTERESTS.

A happy and contented people is no more necessary to a stable and prosperous country than is a happy and contented student body necessary to an efficient college. Therefore, the health, the subsistence, the recreation and the religious life of the students is of no less importance than the fiscal and academic phases of college administration.

Expenses:

Every effort is made to remove temptation to spend money foolishly. Civilian clothes are barred at all times while the student is at College, and leaves of absence which involve parents in expense are limited as far as possible. Text-books and other necessary articles are sold in the Cadet Exchange at practically cost.

Each student who is in College for a session pays the following amounts into the Treasurer to cover his living expenses:

Uniforms (3 coats, 2 trousers and one cap)	$ 30 50
Breakage fee	3 00
Medical fee	5 00
Incidental fee	5 00
Board (@ $8.00 per month)	72 00
Laundry (@ $1.00 per month)	9 00
Heat, light and water (@ $1.00 per month)	9 00
Total	$133 50*

*(Students who are able pay $40.00 additional for tuition.)

The following is a statement of the receipts and expenditures under the cadet fund:

CADET FUND.

Division	Received.		Expended.		Balance.
1. Old Balance	$8,796 99		$6,700 55*		$2,096 44
2. Subsistence	54,920 49		53,618 36		1,302 13
3. Heat, Light and Water	6,213 22		6,200 26		12 96
4. Laundry	6,512 64		5,716 63		796 01
5. Incidentals	4,373 75		4,203 34		170 41
6. Beef Feeding	13,427 22		11,861 66		1,565 56*
7. Southern Ry Scholarship	200 00		200 00		
8. Truck Garden	964 16		528 30		435 86*
9. Sumter City Nat'l.Bank Scholarship	100 00		100 00		
10. Uniforms	25,073 75		25,049 03		24 72
11. Breakage	3,944 07		2,405 24		1,538 83
12. Hospital	4,043 75		4,486 09	(Overdft.)	442 34
Totals	$128,570 04		$121,069 46	(Net)	$7,500 58*

Bills payable on Item 11 ..... $1,538 83

Balance Available for 1913-14 ..... $5,961 75

The above balance remains to the credit of the Cadet Fund, and does not cover into the College Treasury.

The Commissary Department is operated on a strictly commercial basis, paying market prices for all meat, vegetables and dairy products furnished by the College Farm or Dairy.

Daily reports are required showing both the quantity and quality of meals served in the mess-hall, and careful monthly statements and inventories are compiled.

This past year the citizens of the College community, in the employ of the College, have been permitted by your Board to buy provisions from the Commissary on a cash basis. Cost plus 5 per cent. was charged. This concession has been a great convenience and saving to our people, who have heretofore been at the mercy of a few local merchants. Also, the increased volume of business tends to cheapen the cost of provisions to the cadets.

During the year an addition has been made to the serving and baker rooms, and we now have under construction a 41-foot two-story addition to the kitchen wing. In the basement story of this addition will be located a four-ton refrigerator plant, and the second story will be used as a commissary supply room. On account of the precariousness of our ice supply, the refrigerator plant will be not only a great convenience and luxury, but almost a necessity as well. The cost of the building and construction, about $2,867.00, is being paid for out of College funds, and the cost of the refrigerating apparatus, about $3,500.00, paid out of an accumulation of small balances in the cadet fund for several years past. The work is not yet completed.

The truck garden, which is planted for the benefit of the cadet table, although considerably damaged by the dry fall of 1912, helped out greatly. This truck garden closed the year with a balance as a working capital of $435.86.

The past session we have fattened our beef, buying only pork, sausage, etc., from the large packing houses, with one of whom we have a yearly contract.

The dressed beef (114,627 pounds) was sold to the cadet mess at a nominal price of 10 cents per pound. This division shows a balance as a working capital for another year of $1,565.58. The quality of the beef was excellent.

During the year the fare has been wholesome and abundant, and as varied as the low price would permit. On the whole, the cadets seemed well satisfied with it.

The one dollar per month for heat, light and water is paid to the operation of the power station, which furnishes this service.

The steam laundry handles an average of 31 pieces per week per cadet, and charges one dollar per month. The equipment of the laundry is now good, and the quality of the work all that could be desired.

Each cadet upon matriculation pays $5.00 as a medical fee, and this payment entitles him to medical treatment during the session, and board in the hospital when necessary. The amount received from medical fees is not sufficient to meet the expenses of maintaining the hospital and its staff. However, the deficit is more than covered by balances on the incidental and other accounts.

The breakage fee is to insure the College against loss and damage in the laboratories and shops, as well as in barracks. When responsibility can be located on the individual, he is made to pay for the damage from his breakage fee, and when responsibility cannot be located, the damage is prorated among all. Any balance remaining at the end of the session is paid out to the student or his order.

The contract for the cadet uniform is awarded annually by the Finance Committee of the Board of Trustees to the lowest reputable bidder. This year the contract was held by Wm. C. Rowland, of Philadelphia, and next year will go to Jacob Reed's Sons, of Philadelphia.

Health of the Students:

I regret to report the death on October 29, 1912, of Cadet H. F. Hunt, of Anderson County, of appendicitis and peritonitis.

This is the second death we have had during the past five years.

The general health of the corps has been good. We had, however, fifteen cases of appendicitis—about three times the usual number. The only contagious disease was our annual epidemic of measles, and this was a mild type.

We need very much a new and properly arranged hospital. The building of this should have consideration just as soon as funds will permit.

The Religious Life:

The religious activity continues to be a cause for congratulation. The Y. M. C. A. and Bible classes were well attended, and the enrollment quite satisfactory.

Beginning with April, the Baptist and Methodist denominations, having completed their churches, the usual Sunday morning service in Chapel was discontinued, and the cadets were permitted to attend one of the local churches.

The Episcopal and Presbyterian denominations have had churches for some years.

The College pays $500.00 on the salary of each of the four resident ministers, representing the Baptist, Episcopal, Methodist and Presbyterian denominations; $500 is used to bring to Clemson ministers of other Protestant denominations not represented by the resident ministers, and $500.00 is paid to the salary of the resident Y. M. C. A. Secretary, who lives in barracks and works with the students—a total of $3,000 for religious service.

Recreation:

During the first term of next session, 1913-'14, the faculty has planned as an experiment stopping classes at 4 o'clock instead of at 5 as heretofore, in order to give the cadets more time for recreation and rest, as urged by the Board of Visitors and the Chairman of the State Board of Health. This will necessitate using the fore-dinner hours on Saturday to make up for the hour lost from the other five days of the week. The use of five and one-half days instead of only five will probably lead to a better distribution of the work, with less necessary preparation per night. The plan is to be tried as an experiment during the fall term, and it will then be decided whether or not to continue it.

I feel keenly the lack of proper facilities for organized student recreation and rest. We have plenty of work, but opportunities for reasonable recreation and amusement are very limited. It needs to be fully understood and appreciated that play is just as necessary to a successful college course as is work.

The College Architect is now under orders from your Board to prepare by November plans and specifications for a gymnasium, but unless the fertilizer tax greatly increases, **I do not see** how such a building as we need can be built out of our savings.

You will note that the Board of Visitors advises that we ask the Legislature for an appropriation to erect this much-needed building.

Next to a new hospital, I regard a first-class gymnasium as the greatest need of the College, and I earnestly hope that some way can be provided in the near future for both of these buildings.

PART VII. THE OUTLOOK.

The financial affairs of the College have elsewhere in this report been rather fully discussed.

Because of lack of money, work that had been planned—to the extent of $38,001.40—had to be cut from the budget of 1912-'13, or deferred.

The budget for the year July 1, 1913, to June 30, 1914, is based upon an estimate of $230,000 from the fertilizer tax. If it drops below that figure, some of the work provided for must be abandoned.

The following is the estimated resources and expenditures for the fiscal year 1913-'14:

Prospective Resources.

1. Interest on Clemson bequest	$ 3,512 36
2. Estimated tuition	5,000 00
3. Landscript Fund (U. S.)	5,754 00
4. Morrill & Nelson Funds (U. S.) ..	25,000 00
5. Estimated miscellaneous receipts ...	7,000 00
6. Fertilizer tag tax (assumed)	230,000 00
Total income	$276,266 36
Balance carried forward, June 30, '13	12,464 92
Total	$288,731 28*

*Does not include $30,000 Hatch and Adams Funds for the Experiment Station, and which can be used only for research purposes.

Condensed Summary of Proposed Expenditures.

1. For operation and maintenance of College plant, including materials, salaries, labor, upkeep, etc.....	$148,643 92
2. For building, permanent improvements, additions to equipment of shops, laboratories, library, etc...	25,448 35
3. For public service work.....	110,512 66*
Total	$284,604 93

Analysis of Propósed Public State Work.

(a) Fertilizer Inspection and Analysis	$ 34,966 66
(b) Cattle Tick Eradication	8,150 00
(c) Veterinary Inspection	4,541 00
(d) Crop Pest Commission	2,300 00
(e) Scholarships	22,500 00
(f) Coast Experiment Station	1,505 00
(g) Pee Dee Experiment Station	10,475 00
(h) Co-operative Experimental Work	3,125 00
(i) Extension and Demonstration Work.....	20,500 00
(j) Miscellaneous	2,450 00
Total	$110,512 66

Large as is this expenditure for public service, five times as much could be used to advantage. The College wishes to complete its chain of four Experiment Stations—would like to double the amount now expended in Demonstration and Extension Work, and add drainage, live stock and poultry husbandry to present lines of helpfulness.

The College is now aiding the schools in planning better buildings, establishing school gardens, and beautifying school grounds, but this work could be greatly extended if the College had more money. Instruction leaflets, and charts showing common plants, insects, etc., could be furnished but for lack of funds.

At the College there is great need of a modern Hospital, a Gymnasium, a poultry plant, a horse and mule barn, additional live stock for breeding experiments, etc. In fact, never in the history of the College could a larger support be used to advantage.

The College has reached the point where no further public work can be undertaken and no large additions to the College plant be made, unless the fertilizer tax increases, or the Legislature makes appropriations for whatever additional service is required at the hands of the College.

To whom much is given, much is to be expected, and the officers of Clemson College are ready and willing to assume responsibility for the wisdom of past expenditures, and stand sponsor for an even larger support in future. The idea that has prevailed that Clemson College has more money than it can use is very far from the truth.

More money with which to do more work is the slogan, and in this cry the outside needs of the people more than the local needs of the College are emphasized.

The authorities realize that an Agricultural College must serve *all* the people, not merely the comparatively few who gather in its halls to train for efficiency and leadership. The opportunity for service is great—but great opportunity cannot be fully met without great resources. Any support, however large in itself, is too small if it falls short of meeting every reasonable demand that an agricultural people have a right to make upon their Agricultural College.

Clemson College, with its plant well developed, its patronage assured and overflowing, its lines of public service popular and efficient, has behind it a creditable record of achievement, and before it a future bright with the promise of usefulness to South Carolina.

Respectfully submitted,

W. M. RIGGS,
President.

P. S.—I present herewith, as required by law, a list of students who pay tuition, those who do not, and those who hold scholarships.

I attach also a report of the Inspection and Analysis of Fertilizers, reports from the State Veterinarian, State Entomologist and Pathologist, the Secretary-Treasurer of the College, the South Carolina Experiment Station, the report of the Board of Auditors, and the report of the Board of Visitors, and commend all of these to your careful consideration.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.

Free Tuition.	Pay Tuition.	Scholarship.
Abbeville County:		
Anderson, G. M., Antreville.	Aiken, D. W., Abbeville.	Anderson, F. C., Antreville.
Bowman, W. L., Lowndesville.	Cox, R. E., Jr., Abbeville.	Carwile, A. B., Abbeville.
Boyd, A. R., Mt. Carmel.	Cox, J. M., Abbeville.	Cheatham, R. J., Abbeville.
Britt, J. B., McCormick.	Dunn, J. R., Level Land.	Magill, W. K., Abbeville.
Britt, W. B., McCormick.	Jackson, A. H., Abbeville.	Seawright, C., Donalds.
Carwile, R. H., Abbeville.	.....	Wardlaw, F. H., Abbeville.
Cothran, J. S., Abbeville.	.....	.....
Crawford, W. T., Due West.	.....	.....
Crowther, J. H., Antreville.	.....	.....
Ellis, A., Abbeville.	.....	.....
Franklin, J., Willington.	.....	.....
Gilliam, J. W., Abbeville.	.....	.....
Hanvey, E., Troy.	.....	.....
Kennedy, J. L., McCormick.	.....	.....
Leslie, W. E., Jr., Abbeville.	.....	.....
Magill, J. A., Abbeville.	.....	.....
Morrah, U. W., Willington.	.....	.....
McMillan, W. L., Abbeville.	.....	.....
Reid, A. M., Abbeville.	.....	.....
Sharp, W. B., Mt. Carmel.	.....	.....
Todd, J. R., Due West.	.....	.....
Aiken County:		
Boyleston, R. P., Wagener.	Parker, J. E., Graniteville.	Brodie, J. E., Earle.
Creighton, W. H., North Augusta.	.....	Hutson, L. D., Aiken.
Hammond, G. B., Kathwood.	.....	Timmerman, J. P., Trenton.
Hankinson, J. C., Jr., Windsor.	.....	Weeks, T. W., White Pond.
Patillo, U. S., North Augusta.	.....	Woodward, J. T., Aiken.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Aiken County—Con.		
Prothra, L. C., Aiken.	.....	.....
Quattlebaum, H. H., Aiken.	.....	.....
Seigler, G. P., Eureka.	.....	.....
Tyler, G. R., Windsor.	.....	.....
Wilson, T. B., Beech Island.	.....	.....
Woodward, J. L., Aiken.	.....	.....
Anderson County:		
Aull, W. H., Pendleton.	Fant, R. W., Anderson.	Aiken, B. W., Piedmont.
Acker, E. G., Anderson.	Fant, M., Anderson.	Cason, J. M., Piedmont.
Bigby, W. A., Williamston.	Ligon, P. B., Anderson.	Cannon, L. B., Honea Path.
Breazeale, B. S., Pendleton.	Garrison, T. E., Denver.	Hamlin, J. C., Anderson.
Brown, C. K., Anderson.	Mitchel, B. S., Honea Path.	Major, C. S., Anderson.
Burnes, G. M., Anderson.	Seybt, H. B., Anderson.	O'Neal, R. M., Pendleton.
Crayton, P. C., Anderson.	Watkins, H. B., Belton.	Pennell, R. E., Belton.
Cromer, C. N., Anderson.	.....	Poore, R. D., Belton.
Cromer, C. W., Pendleton.	.....	Shearer, W. A., Anderson.
Dunlap, C. K., Belton.	.....	Simpson, D. M., Honea Path.
Douthit, J. B., Jr., Pendleton.	.....	Thompson, L. P., Anderson.
Freeman, T. I., Honea Path.	.....	Wright, C. K., Belton.
Garrison, E. W., Sandy Springs.	.....	.....
Garrison, W. H., Denver.	.....	.....
Green, W. F., Anderson.	.....	.....
Green, L. P., Anderson.	.....	.....
Harris, J. J., Pendleton.	.....	.....
Harris, G. G., Belton.	.....	.....
Martin, R. F., Williamston.	.....	.....
Martin, S. J., Anderson.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Anderson County—Con.		
Masters, M. K., Anderson.	.....	.....
Moore, J. S., Anderson.	.....	.....
McConnell, H. S., Anderson.	.....	.....
McDaniel, C. T., Anderson.	.....	.....
McGee, H. S., Honea Path.	.....	.....
Newton, J. L., Pendleton.	.....	.....
Opt, R. A., Belton.	.....	.....
Pickens, W. A., Easley.	.....	.....
Pruitt, A. R., Anderson.	.....	.....
Ragsdale, R. E., Pelzer.	.....	.....
Reed, C. C., Anderson.	.....	.....
Russell, J. A., Autun.	.....	.....
Sitton, J. J., 1st, Easley.	.....	.....
Sitton, J. J., Jr., 2d. Pendleton.	.....	.....
Smith, G. W., Townville.	.....	.....
Smith, P. N., Pendleton.	.....	.....
Smith, H. L., Anderson.	.....	.....
Smith, M. R., Pendleton.	.....	.....
Smith, J. M., 1st, Starr.	.....	.....
Snipes, H., Anderson.	.....	.....
Stewart, R. B., 2d, Pelzer.	.....	.....
Trescott, J. H., Pendleton.	.....	.....
Watson, D. J., Anderson.	.....	.....
Watkins, H. S., Anderson.	.....	.....
Whitten, F. W., Pendleton.	.....	.....
Whitten, W. C., Pendleton.	.....	.....
Witherspoon, T. C., Anderson.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Anderson County—Con.		
Wyatt, E. F., Easley.	.....	.....
Webb, S. C., Anderson.	.....	.....
Webb, C. W., Jr., Anderson.	.....	.....
Bamberg County:		
Chitty, J. W., Olar.	.....	Cook, W. B., Olar.
Crum, H. M., 1st, Denmark.	.....	McMillan, G. F., Jr., Ehrhardt.
Crum, H. M., 2d, Denmark.	.....	.....
Hill, B. F., Bamberg.	.....	.....
Morris, C., Olar.	.....	.....
Price, E. L., Jr., Bamberg.	.....	.....
Rhoad, J. S., Bamberg.	.....	.....
Rice, W. H., Denmark.	.....	.....
Rowell, R. C., Bamberg.	.....	.....
Barnwell County:		
Anderson, C. S., Donora.	Dicks, W. H., Dunbarton.	Armstrong, G. M., Barnwell.
Fowke, L. C., Baldock.	Patterson, J. A., Allendale.	Boyleston, H. G., Elko.
Lawton, M. S., Allendale.	.....	Connor, B., Barnwell.
Loadholt, J. T., Fairfax.	.....	Creech, J. F., Barnwell.
Rhodes, H. D., Meyers Mill.	.....	Smith, W. C., Jr., Williston.
Tison, J. A., Allendale.	.....	.....
Youmans, C. P., Fairfax.	.....	.....
Beaufort County:		
.....	Bristol, H. W., Beaufort.	Bostick, B., Beaufort.
.....	.....	Neil, W. H., Jr., Chisolm.
Berkeley County:		
Causey, R. G., Jr., Pinopolis.	.....	Lucas, H. R., Pinopolis.
Winters, D. M., Moncks Corner.	.....	Myers, P. E., Cordesville.
.....	.....	Stevens, J. G., Monck's Corner.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Calhoun County:		
Buyck, D. D., Jr., St. Matthews.	Banks, D. K., St. Matthews.	Culclosure, J. H., Swansea.
Dantzler, M. A., Cameron.	Banks, D. H., St. Matthews.	Evans, D. W., Cameron.
Haigler, A. L., Cameron.	Banks, W. D., St. Matthews.	.....
Haigler, S. W., Cameron.	Pearlstine, L. C. St. Matthews.	.....
Inabinet, M. A., St. Matthews.	Wannamaker, W. B., St. Matthews.	.....
Smoke, A. S., St. Matthews.	.....	.....
Wannamaker, H. L., St. Matthews.	.....	.....
Wolfe, W. F., Swansea.	.....	.....
Charleston County:		
Amme, D. A., Charleston.	Barnwell, J. W., Jr., Charleston.	Auld, C. S., Mt. Pleasant.
Barnwell, F. H., Adams Run.	FitzSimons, J. C., Charleston.	Auld, I. D., Mt. Pleasant.
Bell, St. J. E., Charleston.	Evans, A. B., Charleston.	Bouson, F. W., Charleston.
Blanchard, E. S., Moultrieville.	Henderson, J. R., Charleston.	Frampton, W. H., Charleston.
Campsen, G. E., Charleston.	Leland, A. M., McClellanville.	Hanahan, J. E., Johns Island.
Haight, A. B., Charleston.	McDermid, G. C., Charleston.	Holmes, W. H., Jr., Mt. Pleasant.
Hale, P. S., Mt. Pleasant.	O'Hagan, V. B., Charleston.	Turbeville, A. C., Charleston.
Jenkins, G. M., Adams Run.	Peeples, J. W., Meggetts.	.....
Jervey, F. J., Charleston.	Poulnot, J. M., Charleston.	.....
Kangeter, J. H., Charleston.	Rugheimer, A. H., Charleston.	.....
King, F. J., Charleston.	Schroeder, J. N., Jr., Charleston.	.....
Mather, E. W., Charleston.	Shingler, Harry, Charleston.	.....
Miles, F. A., Charleston.	Stanford, A. G., Charleston.	.....
McDonald, F. H., Charleston.	Stender, H. R., Charleston.	.....
Nowell, A. E., Jr., Charleston.	.....	.....
Patjens, A. A., Mt. Pleasant.	.....	.....
Patjens, H. K., Mt. Pleasant.	.....	.....
Rivers, H. F., Charleston.	.....	.....
Rogers, H. E., Ravenel.	.....	.....
Robertson, F. H., Charleston.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Charleston Co.—Con.		
Seabrook, T. P., Awensdaw.	.....	.....
Trott, H. R., Mt. Pleasant.	.....	.....
Williams, L. E., Charleston.	.....	.....
Wigfall, C. Y., Charleston.	.....	.....
Cherokee County:		
Cash, G. F., Gaffney.	Fain, P. Murphy.	Brown, H. F., Gaffney.
Caldwell, A. G., Blacksburg.	Jefferies, W. N., Pacolet.	Camp, W. B., Gaffney.
Fincken, J. A., Gaffney.	Philips, Carroll, Gaffney.	Patrick, C. S., Gaffney.
Goudlock, W. J., Gaffney.	.....	.....
Kendrick, J. W., Gaffney.	.....	.....
Chester County:		
Boyd, J. T., Cornwell.	Alexander, R. A., Chester.	Finch, W. H., Fort Lawn.
Brawley, W. F., Chester.	.....	Ferguson, W. H., Chester.
Colvin, J. S., Jr., Chester.	.....	Johnston, R. B., Chester.
Ferguson, J. M., Chester.	.....	Pressley, E. H., Chester.
Ferguson, J. G., Bascomville.	.....	Sanders, J. W., Richburg.
Hudson, W. O., Bascomville.	.....	Simpson, J. A., Richburg.
Kee, J. S., Rodman.	.....	.....
Miller, J. L., Cornwell.	.....	.....
Morrison, W. E., Chester.	.....	.....
McFadden, W. N., Lewis Turnout.	.....	.....
McKeown, H. S., Cornwell.	.....	.....
Wilkes, T. F., Chester.	.....	.....
Wilson, J. L., Lowryville.	.....	.....
Chesterfield County:		
Coward, A. C., Chesterfield.	Thrower, J. R., Cheraw.	Rivers, J. H., Chesterfield.
Harrall, J. P., Cheraw.	.....	Teal, W. A., Middendorf.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Clarendon County:		
Andrews, N. Z., Manning.	DuRant, N. L., Alcolu.	Creecy, P. J., Manning.
Burgess, J. H., Summerton.	Gentry, T. C., Summerton.	Mims, J. F., Manning.
Davis, C. L., Manning.	Nelson, P. B., Manning.	Ridgill, R. H., Manning.
Driggers, C. B., Turbeville.	Reaves, R. H., Alcolu.	Sprott, W. T. P., Fouston.
Mims, S. L., Pinewood.	Sprott, J. R., Manning.	.....
Montgomery, J. H., Mayesville.	.....	.....
McIntosh, H., New Zion.	.....	.....
Richburg, J. W., Manning.	.....	.....
Turbeville, J. E., Turbeville.	.....	.....
Witherspoon, J. T., Mayesville.	.....	.....
Witherspoon, S. M., Jr., Mayesville.	.....	.....
Colleton County:		
Easterlin, C. A., Round.	Ackerman, M. W., Cottageville.	Connor, F. M., Smoaks.
Hiott, G. F., Round.	.....	Garris, J. M., Round.
Hubster, E. L., Walterboro.	.....	Garris, E. W., Round.
Mears, J. F., Islandton.	.....	Harrison, J. Z., Smoaks.
Padgett, H. I., Smoaks.	.....	.....
Risher, P. W., Jr., Smoaks.	.....	.....
Smith, H. W., Cottageville.	.....	.....
Darlington County:		
Askins, J. P., Hartsville.	Dargan, J. F., Darlington.	Byrd, D. E., Society Hill.
Byrd, E. M., Hartsville.	Kirven, N. W., Darlington.	Dickson, A. M., Darlington.
Carter, M. L., Timmonsville.	Kirven, C. L., Darlington.	Jordan, A. L., Darlington.
Eagerton, C. B., Ridgeville.	.....	McInness, P. W., Darlington.
Funk, L. W., Darlington.	.....	McLeod, W. G., Hartsville.
Gandy, M., Dovesville.	.....	Muldrow, H. W., Darlington.
Gandy, A. P., Dovesville.	.....	Vaughan, C. L., Darlington.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Darlington Co.—Con.		
Howle, A. J., Society Hill.	.....	.....
Jeffords, T. E., Darlington.	.....	.....
Jeffords, R. L., Darlington.	.....	.....
Lunney, G. W., Darlington.	.....	.....
McCall, P. L., Society Hill.	.....	.....
Nettles, H. J., Jr., Hartsville.	.....	.....
Powe, R. W., Hartsville.	.....	.....
Segars, E. H., Hartsville.	.....	.....
Vaughan, W. E., Timmonsville.	.....	.....
Weaver, E. Timmonsville.	.....	.....
Williamson, R. E., Darlington.	.....	.....
Winters, E. S., Society Hill.	.....	.....
Dillon County:		
Braswell, J. R., Jr., Fork.	McEachern, D. H., Hamer.	Dunlap, J. E., Latta.
Evans, A. J., Dillon.	.....	Roberts, S. L., Latta.
McDonald, C., Hamer.	.....	.....
McLaurin, J. R., Latta.	.....	.....
Oliver, R. S., Hamer.	.....	.....
Rodgers, N. R., Latta.	.....	.....
Dorchester County:		
Campbell, L. O., Summerville.	Rhett, W. P., Summerville.	Dukes, H. H., St. George.
Howell, V. M., St. George.	.....	Fogle, G. H., Ridgeville.
Johnstone, W. E., St. George.	.....	Murray, J. J., St. George.
McAlhany, T. D., St. George.	.....	Westbury, J. A., St. George.
Thornhill, T. W., Summerville.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Edgefield County:		
Adams, H. M., Meriwether.	.....	Salter, F. P., Jr., Trenton.
Adams, J. T., Edgefield.	.....	Strother, J. R., Edgefield.
Carmichael, J. H., Edgefield.	.....	.....
Holmes, C., Johnston.	.....	.....
Holmes, L. F., Johnston.	.....	.....
Lanham, G. F., Edgefield.	.....	.....
McDonald, J. W., Parksville.	.....	.....
McKie, J. G., Meriwether.	.....	.....
Padgett, T. O., Edgefield.	.....	.....
Pearce, G. H., Johnston.	.....	.....
Sheppard, G. J., McCormick.	.....	.....
White, J. K., McCormick.	.....	.....
White, M. C., McCormick.	.....	.....
Fairfield County:		
Blair, J. D., Jr., Winnsboro.	Jones, J. P., Jr., Longtown.	Coleman, C. H., Blairs.
Castles, T. G., Winnsboro.	.....	Hoffman, G. P., Blythewood.
Cathcart, T. M., Winnsboro.	.....	Ragsdale, W. G., Winnsboro.
Ketchin, W. W., Jr., Winnsboro.	.....	Reeves, W. A., Longtown.
Nicholson, W. W., Woodward.	.....	.....
Park, A. D., Winnsboro.	.....	.....
Florence County:		
Atkinson, G. P., Timmonsville.	Anderson, J. B., Timmonsville.	Johnston, F. S., Florence.
Brown, S. K., Hyman.	Vincent, C. A., Mars Bluff.	Lawhon, G. J., Timmonsville.
Green, E. B., Timmonsville.	.....	Moore, G. F., Mars Bluff.
Hill, L. G., Effingham.	.....	Moore, J. H., Mars Bluff.
Hyman, W. H., Hyman.	.....	McBride, J. N., Florence.
Jeffords, S. E., Timmonsville.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Florence County—Con.		
Pettigrew, W. F., Florence.	.....	.....
Smith, L. H., Lake City.	.....	.....
Smith, M. A., Lake City.	.....	.....
Ward, C. W., Timmonsville.	.....	.....
Ward, A. H., Timmonsville.	.....	.....
Willoughby, W. J., Jr., Scranton.	.....	.....
Georgetown County:		
Doar, E. M., Jr., Georgetown.	Lachicotte, A. H., Waverly Mills.	Davis, W. O., Georgetown.
Lachicotte, W. F., Waverly Mills.	Porter, J. H., Georgetown.	Lachicotte, E. S., Waverly Mills.
Rosa, D. D., Georgetown.	Ward, J., Georgetown.	Rosa, J. T., Jr., Georgetown.
Greenville County:		
Ashmore, C. J., Princeton.	Harris, J. D., Jr., Greenville.	Cannon, J. C., Simpsonville.
Berry, M. D., Greenville.	Harrison, S. E., Jr., Simpsonville.	Foster, E. A., Piedmont.
Berry, F. O., Greenville.	Iler, C. B., Greenville.	Green, M. C., Greenville.
Berry, J. F., Greenville.	Marchant, J. L., Greer.	Hopkins, D. R., Fountain Inn.
Bull, C. N., Greenville.	Mallard, J. T., Greenville.	.....
Carpenter, P. M., Marietta.	Morgan, G. R., Greenville.	.....
Chapman, R. C., Pelzer.	Poe, T. M., Greenville.	.....
Cureton, R. B., Greenville.	Prince, G. E., Greenville.	.....
DuVernett, E. P., Greenville.	Ramsay, S. I., Greenville.	.....
Hellams, R. B., Greenville.	Robinson, R., Greer.	.....
James, B. M., Greenville.	Robinson, J. A., Greer.	.....
Kilgo, P. R., Greenville.	West, W. D. Greenville.	.....
Lee, F., Piedmont.	Wood, W. D., Greer.	.....
Major, W. P., Piedmont.	Wood, J. T., Greer.	.....
McKinney, S. J., Greenville.	.....	.....
Owens, E. R., Greenville.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Greenville Co.—Con.		
Rabb, S. W., Greenville.	.....	.....
Sloan, D. Mc., Greenville.	.....	.....
Suttles, T., Greenville.	.....	.....
Talley, J. C., Travelers' Rest.	.....	.....
Greenwood County:		
Atkins, R. S., Greenwood.	Cason, C. W., Jr., Hodges.	Calhoun, J. A., Ninety Six.
Benjamin, R. N., Greenwood.	Kennedy, W. P., Troy.	Chatham, F. W., Ninety Six.
Burnett, S. T., Dyson.	.....	Haddon, T. C., Hodges.
Briggs, G. R., Greenwood.	.....	Haddon, F. M., Hodges.
Craig, H. C., Greenwood.	.....	Hodges, F., Greenwood.
Duncan, D. T., Ninety-Six.	.....	McCord, A. S., Hodges.
Emerson, C. R., Hodges.	.....	Richter, J. C., Greenwood.
Gaillard, A. P., Jr., Ninety Six.	.....	Seal, J. L., Greenwood.
Gaines, M. W., Greenwood.	.....	Tarrant, L. R., Greenwood.
Holland, J. G., Ninety Six.	.....	.....
Kennerly, H. S., Greenwood.	.....	.....
Newman, W. W., Hodges.	.....	.....
Sprott, J., Greenwood.	.....	.....
Taylor, W. A., Greenwood.	.....	.....
Warner, H. T., Greenwood.	.....	.....
Williams, B. N., Gains.	.....	.....
Seigler, Y. E., McCormick.	.....	.....
Hampton County:		
Baxter, E. B., Garnett.	Tuten, L. B., Jr., Brunson.	Causey, C. E., Furman.
Baxter, C. L., Garnett.	Tuten, E. J., Hampton.	Hiers, J. L., Hampton.
Harvey, W. B., Hampton.	.....	Miley, J., Brunson.
Kittles, E. G., Brighton.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Hampton County—Con.		
Lawton, B. E., Garnett.	.....	.....
Miley, C. H., Brunson.	.....	.....
Horry County:		
Blanton, P. M., Green Sea.	Allsbrook, J. G., Sanford.	Cooke, R. C., Jordanville.
Harrelson, J. S., Nichols.	Derham, J. P., Jr., Green Sea.	Lewis, J. J., Galivant's Ferry.
.....	Holliday, F. G., Galivant's Ferry.	.....
.....	Worley, Smith. Nichols.	.....
Jasper County:		
Solomons, S. R., Ridgeland.	.....	McKenzie, C. L., Pineland.
Kershaw County:		
Boykin, A. D., Lugoff.	.....	Bowers, W. E., Kershaw.
Kirkley, J. A., Kershaw.	.....	Bell, H. G., Lugoff.
McIntire, J. E., Lugoff.	.....	Richards, J. P., **Liberty Hill.**
Richards, S. M., Liberty Hill.	.....	Shannon, C. J., Camden.
Williams, W. R., Camden.	.....	Trotter, A. M., Camden.
Wood, J. W., Blaney.	.....	.....
Lancaster County:		
Bennett, C. G., Lancaster.	Culvern, F. M., Kershaw	Bell, O. R., Lancaster.
Blackmon, L. R., Kershaw.	.....	Blackmon, J. F., Lancaster.
Cook, J. L., Taxahaw.	.....	Hendrix, W. H., Heath Springs.
Williamson, S., Lancaster.	.....	King, C. J., Lancaster.
.....	.....	Sowell, H. E., Lancaster.
Laurens County:		
Barkesdale, J. C., Laurens.	Harris, T. G., Owings.	Armstrong, F. E., Owings.
Boazman, G. E., Cross Hill.	.....	Barnett, D. E., Laurens.
Cox, M. E., Gray Court.	.....	Poole, R. F., Gray Court.
Harris, M. H., Gray Court.	.....	Sullivan, J. D., Laurens.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Laurens County—Con.		
Leonard, R. R., Fountain Inn.	.....	Thornton, S. F., Mountville.
Middleton, J. A., Clinton.	.....	Thornton, R. P., Mountville.
Nabors, R. C., Clinton.	.....	Washington, P. M., Ware Shoals.
Stokes, C. E., Mountville.	.....	Young, E. C., Clinton.
Thornton, C. C., Mountville.	.....	.....
Wright, W. F., Laurens.	.....	.....
Yeargin, B. F., Gray Court.	.....	.....
Lee County:		
Clark, J. D., Jr., Lynchburg.	Stuckey, J. E., Jr., Bishopville.	Beasley, L., Bishopville.
Davis, A. F., Camden.	.....	Mathis, N. Y., St. Charles.
Heriot, H. A., Oswego.	.....	Pate, E. H., Bishopville.
Lemmon, D. G., Elliott.	.....	Perrin, J. W., Bishopville.
McElveen, A. V., Lynchburg.	.....	.....
Truluck, G. M. Lynchburg.	.....	.....
Lexington County:		
Barre, M. L., Lexington.	.....	Derrick, R. H., Columbia.
Caughman, W. W., Lexington.	.....	Frick, G. E., Chapin.
Clark, J. R., Chapin.	.....	Kyzer, W. T., Lexington.
Fulmer, J. W., Chapin.	.....	Kyzer, E. D., Lexington.
Kaminer, J. E., Lexington.	.....	Lyles, N. P., Steedman.
Lever, B. R., Chapin.	.....	.....
Stoudemire, C. E., Chapin.	.....	.....
Taylor, G. B., Gilbert.	.....	.....
Woods, E. T., Lexington.	.....	.....
Marion County:		
Davis, J. F., Marion.	Baker, C. W., Marion.	LeGette, F. C., Centenary.
Foxworth, G. D., Marion.	Blackwell, F. Y., Marion.	Mellett, F. M., Mullins.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Marion County—Con.		
Owens, J. I., Marion.	Byars, E. H., Jr., Marion.	Smith, T. C., Mullins.
Rowell, W. A., Centenary.	Gasque, W. E., Marion.	.....
.....	Monroe, J. B., Marion.	.....
.....	McDuffie, J. C., Marion.	.....
.....	McIntire, D., Marion.	.....
.....	Rogers, R. A., Marion.	.....
.....	Williamson, J. V., Mullins.	.....
Marlboro County:		
Bundy, F. L., Clio.	Fletcher, J. E., McColl.	Crouch, A. M., Kollock.
John, D. M., Bennettsville.	Jackson, John M., Bennettsville.	Heiss, G., Clio.
Liles, J. F., Bennettsville.	Odom, R. J., McColl.	Odom, A. T., Gibson.
Page, L. A., Brownsville.	.....	Townsend, H. L., Bennettsville.
Townsend, W. B., Bennettsville.	.....	Usher, P. A., Gibson.
Usher, A. B., Gibson.	.....	.....
Newberry County:		
Boozer, H. S., Newberry.	Berley, J. A., Pomaria.	Folk, C. E., Pomaria.
Brown, E. C., Newberry.	Berley, G. E., Pomaria.	Herbert, W. W., Newberry.
Keith, W. C., Chappells.	Jones, B. M., Newberry.	Shealy, A. L., Prosperity.
Long, S. C., Prosperity.	Smith, I. M., Jr., Kinards.	Wright, R. F., Newberry.
Senn, P. H., Silver Street.	Wallace, D. R., Kinards.	.....
Watkins, J. M., Chappells.	.....	.....
Wright, R. D., Newberry.	.....	.....
Oconee County:		
Barnett, P. G., Westminster.	Brackett, N. C., Clemson College.	Barker, H. D., Tomassee.
Cherry, T. J., Seneca.	Grimshawe, T. D., Jocassee.	Cantrell, O. F., Walhalla.
Dupre, J. S., Walhalla.	Hamilton, B. L., Seneca.	Harris, G. L., Westminster.
Harrison, B. W., Walhalla.	Lowery, T. M., Seneca.	McMahan, W. E., Seneca.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Oconee County—Con.		
Hunt, W. C., Townville.	Morrison, W. A., Clemson College.	Stribling, J. W., Seneca.
Hunt, H. F., Townville.	Phinney, G. L., West Union.	.....
Lewis, A. P., Clemson College.	Schilletter, A. E., Clemson College.	.....
Lewis, R., Clemson College.	Schilletter, W. A., Clemson College.	.....
Martin, P. A., Westminster.	Tribble, R. M., Jr., Seneca.	.....
McMahon, E. O., Richland.	.....	.....
Shiver, H. E., Clemson College.	.....	.....
Stribling, S. C., Richland.	.....	.....
Todd, J. N., Seneca.	.....	.....
Todd, J. G., Seneca.	.....	.....
Verner, L. W., Seneca.	.....	.....
West, C. T., Clemson College.	.....	.....
Orangeburg County:		
Albrecht, C. H., Orangeburg.	Bowman, J. S., Rowesville.	Byers, W. V., Orangeburg.
Boone, T. E., Rowesville.	Breeland, W. L., Holley Hill.	Lathrop, F. H., Orangeburg.
Boone, J. E., Jr., Rowesville.	Connor, F., Ferguson.	Myers, F. O., Orangeburg.
Boyleston, N. E., Springfield.	Dantzler, F. C., Holly Hill.	Patrick, W. T., Bowman.
Boyleston, J. W., Springfield.	Dibble, A. C., Jr., Orangeburg.	Stroman, P., Springfield.
Breland, A. L., Vance.	Farnum, C. O., Jamison.	.....
Bryant, V. F., Orangeburg.	Hydrick, G. B., North.	.....
Byers, J. L., Orangeburg.	Jennings, R. H., Orangeburg.	.....
Chaplin, H. L., Neeses.	Norris, J. E., Vance.	.....
Cullen, C. W., Springfield.	Scoville, W. N., Orangeburg.	.....
Dukes, T. E., Orangeburg.	Scoville, E. N., Orangeburg.	.....
Edwins, A. L., Orangeburg.	Simmons, B. F., Rowesville.	.....
Fairey, R. H., Orangeburg.	Wolfe, L. F., Orangeburg.	.....
Glover, J. E., Jr., Orangeburg.	.....	.....
Holman, J. R., Orangeburg.	.....	.....
Hood, S. C., **Orangeburg.**	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Orangeburg Co.—Con.		
Hutto, S. W., Vance.	.....	.....
Jennings, T. A., Cope.	.....	.....
Jennings, O. R., Cardova.	.....	.....
Kennedy, R. G., Orangeburg.	.....	.....
Ligon, A. C., Jr., Orangeburg.	.....	.....
Livingston, A. H., North.	.....	.....
Pearson, J. F., Orangeburg.	.....	.....
Rickenbaker, D. Mc, Orangeburg.	.....	.....
Thomas, N. G., Cope.	.....	.....
Wannamaker, H. C., Jr., Orangeburg.	.....	.....
Weeks, L. W., Orangeburg.	.....	
Smith, D. N., Jr., Orangeburg.	.....	.....
Pickens County:		
Boggs, J. K., Liberty.	Hester, S. M., Easley.	Hutchings, J. M., Pickens.
Boggs, L. A., Liberty.	Skelton, S. E., Liberty.	Hunter, W. J., Liberty.
Bunker, F. L., Easley.	.....	O'Dell, D. G., Liberty.
Chapman, H. R., Liberty.	.....	Stewart, R. B., Easley.
Chambliss, H. E., Clemson College.	.....	Thomas, L. P., Dacusville.
Chapman, H. M., Liberty.	.....	.....
Folger, D. F., Central.	.....	.....
Hall, J. D., Central.	.....	.....
Hester, P. H., Liberty.	.....	.....
Hendricks, C. M., Calhoun.	.....	.....
Hunter, M. W., Liberty.	.....	.....
Lewis, H. C., Pickens.	.....	.....
Merck, W. O., Calhoun.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Pickens Co.—Con.		
Ross, A. E., Clemson College.	.....	.....
Sloan, A. H., Clemson College.	.....	.....
Richland County:		
Bynum, E. G., Eastover.	Campbell, C. C., Columbia.	Davis, T. F., Jr., Killian.
Caughman, K. G., Columbia.	Grant, H. L., Jr., Columbia.	Jenkins, R. F., Columbia.
Cotton, J. L., Eastover.	Harman, G. D., Columbia.	McIntosh, J. M., Columbia.
Darby, J. T., Eastover.	Hook, L. J., Eastover.	Sandifer, T. N., Columbia.
Edmonds, M., Columbia.	.....	.....
Eleazer, J. M., Chapin.	.....	.....
Gee, C. F. Columbia.	.....	.....
Hollowell, J. W., Columbia.	.....	.....
Jones, T. M., Columbia.	.....	.....
May, L. A., Columbia.	.....	.....
Perry, W. L., Columbia.	.....	.....
Rivers, W. J., Eastover.	.....	.....
Rice, C. A., Columbia.	.....	.....
Shealey, W. B., White Rock.	.....	.....
Walker, C. L., Columbia.	.....	.....
Weston, C. T., Congaree.	.....	.....
Saluda County:		
Burnett, D. P., Dyson.	Webb, G. R., Chappells.	Coleman, P. G., Silver Street.
Carson, A. B., Saluda.	Webb, J. S., Chappells.	Willis, J. W., Saluda.
Crawford, F. P., Saluda.	.....	Wise, J. R., Saluda.
Derrick, J. S., Batesburg.	.....	.....
Johnson, A. T., Fruit Hill.	.....	.....
Lester, J. A., Silver Street.	.....	.....
Rhinehardt, E. C., Leesville.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Saluda Co.— Con.		
Riser, W. E., Leesville.	.....	.....
Werts, J. D., Prosperity.	.....	.....
Spartanburg County:		
Anderson, V. T., Spartanburg.	Bishop, W. C., Inman.	Cannon, D. L., Spartanburg.
Bomar, H. J., Spartanburg.	Erwin, J. O., Jr., Spartanburg.	Foster, G. R., Roebuck.
Bonner, C. N., Cherokee.	Erwin, J. W., Spartanburg.	Hough, T. C. Landrum.
Bomar, W. M., Jr., Spartanburg.	Hydrick, D. E., Jr., Spartanburg.	Osborne, F., Spartanburg.
Beymer, O. H., Spartanburg.	Sams, R. H., Spartanburg.	Parker, H. L., Roebuck.
Bunch, B. J., Spartanburg.	.....	Pollard, J. W., Spartanburg.
Caldwell, M. G., Spartanburg.	.....	Shields, H. L. B., Cherokee.
Carson, J. L., Jr., Spartanburg.	.....	Stribling, F. D., Enoree.
Dean, C., Spartanburg.	.....	West, C. F., White Stone.
Earle, T. M., Spartanburg.	.....	.....
Ezell, R. B., Spartanburg.	.....	.....
Foster, S. W., Roebuck.	.....	.....
Foster, J. C., White Stone.	.....	.....
Hagood, H. A., Spartanburg.	.....	.....
Harty, C. H., Spartanburg.	.....	.....
Harrison, J. F., Moore.	.....	.....
Heldman, J. M., Spartanburg.	.....	.....
Jackson, R., Wellford.	.....	.....
Jones, W. D., Campobello.	.....	.....
Lawson, C. S., Spartanburg.	.....	.....
Martin, G. D., Cowpens.	.....	.....
McBain, J. M., Pacolet.	.....	.....
Murph, C. R., White Stone.	.....	.....
Nolen, C. J., Spartanburg.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Spartanburg Co.—Con.		
Tinsley, D. D., White Stone.	.....	.....
Wall, C. D., Spartanburg.	.....	.....
Wells, J. H. S., White Stone.	.....	.....
Wingo, R. H., Spartanburg.	.....	.....
Sumter County:		
Cain, F. M., Sumter.	Nigels, F. E., Sumter.	Corbett, V. P., Horatio.
DeLorme, B. K., Sumter.	Pitts, P. M., Jr. Sumter.	Jackson, B. M., Hagood.
DesChamps, C. E., Sumter.	Siddall, T. H., Jr., Sumter.	Jackson, B. B., Sumter.
Dwight, P. M., Wedgefield.	.....	Mellett, R. R., Sumter.
Eagerton, B. T., Sumter.	.....	.....
Emanuel, C. P., Borden.	.....	.....
Emanuel, L. T., Borden.	.....	.....
Hood, R. S., Jr., Sumter.	.....	.....
Jones, J. D., Sumter.	.....	.....
Jones, A. C., Sumter.	.....	.....
LeGrand, L., Sumter.	.....	.....
Randle, E. L., Sumter.	.....	.....
Sanders, H. H., Hagood.	.....	.....
Sanders, B., Dalzell.	.....	.....
Sanders, H. L., Hagood.	.....	.....
Stuckey, L., Dalzell.	.....	.....
Union County:		
Arthur, W. D., Jr., Union.	Arthur, E. J., Union.	Arthur, W. H., Union.
Baldwin, H. L., Mt. Tabor.	Goings, H. R., Union.	Charles, J. H., Union.
Gilmore, E. R., Santuck.	McLure, J. W., Union.	Faucett, B. G., Union.
Gilmore, W. C., Santuck.	.....	Littlejohn, C. E., Jonesville.
Jeter, W. T., Carlisle.	.....	Smith, W. S., Union.

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
Union Co.—Con.		
Jeter, W. R., Carlisle.	.....	.....
Jeter, J. P., Jr., Santuck.	.....	.....
Johnson, R. H., Mt. Tabor.	.....	.....
Johnson, M. T., Mt. Tabor.	.....	.....
Oetzel, J. G., Union.	.....	
Vaughan, G. F., Adamsburg.	.....	
Williamsburg County:		
Bass, N. B., Lane.	.....	McCullough, J., Benson.
Brockington, J. H., Indiantown.	.....	McConnell, R. M., Kingstree.
Chapman, E. L., Johnsonville.	.....	.....
Rogers, T. B., Vox.	.....	.....
Woodbury, D. L., Johnsonville.	.....	.....
York County:		
Barnes, F. S., Rock Hill.	White, P. D., Yorkville.	Blankenship, B. C., Fort Mill.
Barron, W. W., Rock Hill.	Wilkerson, W. B., Hickory Grove.	Faris, M. A., Fort Mill.
Barnett, M. S., Clover.	.....	Ferguson, T. M., Clover.
Barron, B. P., Yorkville.	.....	Kendricks, J. B., Clover.
Boyce, J. M., Rock Hill.	.....	Logan, J. R., Jr., Yorkville.
Boyd, P. O., Fort Mill.	.....	Moore, T. P., Jr., Yorkville.
Brandon, T. B., McConnellsville.	.....	.....
Browne, G. H., Rock Hill.	.....	.....
Cork, W. N., Rock Hill.	.....	.....
Drakeford, J. M., Yorkville.	.....	.....
Epps, W. C., Fort Mill.	.....	.....
Garrison, E. H., Rock Hill.	.....	.....
Glenn, T. L., Yorkville.	.....	.....
Glenn, R. H., Yorkville.	.....	.....

CLASSIFICATION OF STUDENTS AS REGARDS PAYMENT OF TUITION AND HOLDING OF SCHOLARSHIPS.—Continued.

Free Tuition.	Pay Tuition.	Scholarship.
York Co.—Con.		
Faris, J. C., Rock Hill.	.....	.....
Jenkins, W. L., Rock Hill.	.....	.....
Jonas, D. L., Yorkville.	.....	.....
Justus, F. B., Hickory Grove.	.....	.....
Massey, L. H., Fort Mill.	.....	.....
Smarr, W. L., Sharon.	.....	.....
Steele, J. H., Rock Hill.	.....	.....
Suggs, H. L., Yorkville.	.....	.....
Williams, W. G., Yorkville.	.....	.....
Williams, K. A. Yorkville.	.....	.....
Zenker, H. M., Rock Hill.	.....	.....

NON-RESIDENT STUDENTS.

Free Tuition.	Pay Tuition.	Scholarship.
.....	Allison, H., Brevard, N. C.	.....
.....	Agnew, E. H., Canon, Ga.	.....
.....	Bailie, R. C., Jr., Augusta, Ga.	.....
.....	Black, F., Pelham, N. Y.	.....
.....	Carter, J. C., Gainesville, Ga.	.....
.....	Coles, M., Jacksonville, Fla.	.....
.....	Flournoy, J. E., Macon, Ga.	.....
.....	Frazier, A. D., Atlanta, Ga.	.....
.....	Laidlaw, R. E., Marion, N. C.	.....
.....	Mallory, W. W., Savannah, Ga.	.....
.....	Provost, E. T., York, Neb.	.....
.....	Sherrill, S. S., Charlotte, N. C.	.....
.....	Swinehart, D. E., LasCascadas, Panama.	.....
.....	Tate, T. H., Union Mills, N. C.	.....
.....	Vandivire, L. A., Dawson, Ga.	.....

REPORT OF THE TREASURER
FOR THE
FISCAL YEAR, JUNE 30, 1913.

Clemson College, S. C., July 9th, 1913.

To the Finance Committee of the Board of Trustees (through the President).

Gentlemen: As Treasurer of Clemson Agricultural College, I beg to submit herewith my annual report of all College funds received and disbursed by me during the fiscal year beginning July 1st, 1912, and closing June 30th, 1913. The total income to the College, including a balance of $4,937.51 brought over from the previous year, was $284,748.33. This sum was expended as follows:

Operating Expenses of College—

Salaries, Labor, Coal, Material, etc..	$147,682 22

Permanent Additions to Plant—

Buildings, Laboratory, and Library Equipment, etc..	23,711 25

Public State Work—

Fertilizer Inspection and Analysis, Beneficiary Scholarships, etc..	100,889 94
	$272,283 41

Leaving a balance of $12,464.92 on hand. A detailed account of the receipts and expenditures will be found in the body of this report, and to which your attention is directed.

Respectfully submitted,
P. H. E. SLOAN, Treasurer.

REPORT OF THE TREASURER FOR THE FISCAL YEAR JULY 1, 1912, TO JUNE 30, 1913.

RESOURCES.

Dr.

Balance Brought Forward from June 30, 1912..		$4,937 51
Income—		
Privilege Fertilizer Inspection Tax..	$231,500 00	
Morrill and Nelson Funds (U. S.)	25,000 00	
Interest on Landscrip Funds	5,754 00	
Tuition from Cadets	5,050 00	
Interest on Clemson Bequest	3,512 36	
Sales, Interest, Refunds, etc..	8,994 46	
		279,810 82
Total		$284,748 33

EXPENDITURES.

Public State Work—

Cr.

Beneficiary Scholarships		$20,002 89
Fertilizer Inspection and Analysis		31,069 73
Coast Experiments		1,617 61
Co-operative Experimental Work		3,105 92
Extension and Demonstration Work		17,751 82
Crop Pest Commission		2,049 31
Tick Eradication		8,774 04
Veterinary Inspection		5,090 52
Miscellaneous Public State Work		3,017 23
Pee Dee Experiments		8,410 87
		$100,889 94

Operating Expenses of College—

Salaries, Labor, Coal, Materials, etc.	$147,682 22	147,682 22

Permanent Additions to Plant—

Additional Shop, Library, Laboratory Equipment, etc.	$12,832 49	
Buildings and Permanent Improvements	10,878 76	
		23,711 25
		$272,283 41

Unexpended—

Balance carried forward into July, 1913	12,464 92
Total	$284,748 33

THE FOLLOWING IS A MORE DETAILED STATEMENT, SHOWING THE EXPENDITURES AND COST OF THE PUBLIC STATE WORK, AND EACH DEPARTMENT AND DIVISION OF THE COLLEGE, UNDER THE ITEMS APPROPRIATED BY THE BOARD OF TRUSTEES:

PUBLIC STATE WORK DEPARTMENT.

Beneficiary Scholarships Division—

Scholarships and Advertisements	$20,002 89	
		$20,002 89

Chemical Analysis Division—

Apparatus	$680 18	
Chemicals	593 81	
Gasoline	303 89	
Record Books, Postage, Stationery	142 22	
Charcoal	19 00	
Incidentals	45 45	
Labor—Janitor	120 00	
Extra Help in Laboratory and Office	327 37	
Additional Supplies	363 44	
Salaries	9,141 30	
		$11,736 66

Coast Experiment Station Division—

Masonry Work	$5 20	
Deepening Rump Creek	8 00	
Tool, Wagon and Scale Shed	65 15	
Hay Press	120 96	
Tile Drainage for 10 Acres	9 60	
Telephone to Summerville	100 39	
Salaries	1,308 31	
		1,617 61

Co-operative Experimental Work Division—

Co-operative Work on Farms	$473 22	
Travel Expenses of Botanist and Assistant	385 82	
Student Labor	86 50	
Printing, Postage, Stationery, etc.	101 18	
Fungicides, Spraying Equipment	23 78	
Seeds and Field Supplies for Wilt Work	37 00	
Insecticides	49 65	
Travel and Field Supplies	148 89	
Salaries	1,799 88	
		3,105 92

Extension and Demonstration Work Division—

Field Demonstration	$318 59	
Extension Work and Farmers' Institutes	2,362 14	
Postage, Stationery, Publications	417 29	
Office and Clerical Assistance	350 00	
Contribution to Knapp Demonstration Work	9,998 65	
Office fixtures and Equipment	106 83	
Salaries	4,198 32	
		17,751 82

Fertilizer Inspection Division—

Labor—Janitor	$240 00	
Tags and Printing	3,023 66	
Travel and Pay of Inspectors	11,554 05	
Printing and Mailing Weekly Bulletins	518 14	
Freight, Postage and Incidentals	529 71	
Legal Services	250 00	
Condensed Fertilizer Bulletins	609 64	
Inspector's Cases, Trunks, etc.	172 98	
Repairs to Elevators, Awnings, etc.	1 65	
Salaries	2,433 24	
		19,333 07

Crop Pest Commission Division—

Expenses of Entomologist	$399 83	
Expenses of Pathologist	495 90	
Office Equipment	18 50	
Legal Expenses	40 00	
Salaries	1,095 08	
		2,049 31

Tick Eradication Division—

Pay of Inspectors	$5,461, 25	
Expenses of Inspectors	1,884 94	
Printing and Office Expenses	247 85	
Salaries	1,180 00	
		8,774 04

Veterinary Inspection Division—

Travel, Printing and Office Expenses	$1,716 14	
Legal Services	117 40	
Hog Cholera Serum Work	499 87	
Graduate Student Assistant	416 60	
Equipment for Hog Cholera Serum Work	32 25	
Salaries	2,308 26	
		5,090 52

Miscellaneous Public State Work Division—

State Fair Exhibit	$900 69	
State Fair Encampment	389 28	
Popular Bulletins	296 14	
Textile Extension Work	60 77	
Exhibit at National Corn Exposition	497 65	
Entertainment of County Superintendents and Legislative Committee	395 60	
Contribution to Local School	400 00	
Entertainment of D. A. R.	47 10	
Monument to Col. Starke	30 00	
		3,017 23

Pee Dee Experiment Station Division—

Labor	$979 79	
Fertilizers	1,964 41	
Contingent	423 99	
Eight Mules	1,620 00	
Tools and Implements	484 87	
Barn and Sheds	1,886 19	
Salaries	1,051 62	
		8,410 87

Public State Work Expenditures $100,889 94

COLLEGE WORK.

ACADEMIC DEPARTMENT—

English Division—

Awnings and Shades for Class Room	$38 50	
One Set Wall Maps (Bryan)	27 53	
Dictionary (Daniel)	11 30	
Reference Books (Bradley & Bryan)	17 92	
		$95 25

History Division—

Periodicals for Class Room	$46 35	
Charts of Europe (Holmes)	12 50	
		58 85

Mathematics Division—

Repairs to Class Room Furniture	65	
Shades and Awnings for Windows	7 00	
		7 65

Office and Unclassified, Academic Division—

Labor—Two Janitors	$504 00	
Chalk, Erasers, Brooms, Stationery	159 14	
		663 14

Physics Division—

Laboratory Supplies and Repairs	$14 36	
Repairs to Class Room and Laboratory	9 20	
Small Class Apparatus	18 85	
Student Assistant	360 00	
Chairs and Stools for Laboratory	6 50	
Electrical Apparatus	10 00	
Accessories for Optical Bench	15 00	
Wave Trough	15 00	
Sound Lens	10 00	
		458 91

Salary Division—

Salaries—Professors and Assistants	$23,999 64	
		23,999 64
Department Expenditures		$25,283 44

AGRICULTURAL DEPARTMENT.

Agronomy Division—

Freight on Loaned Machinery	$108 39	
Cement, Gasoline, Oil	2 45	
Seeds, Score Cards, etc.	24 49	
Small Apparatus for Soil Physics Work	38 76	
Repairs and New Parts for Machines	3 85	
Materials for Class Work	29 64	
Tools for Farm Machinery Building	26 23	
Equipment for Soil Physics Laboratory	79 40	
		$313 21

Animal Husbandry and Dairying Division—

Salt, Coal, Ice, Oil (Dairy)	$394 96	
Glass Ware and Chemicals	18 53	
Score Cards and Dairy Blanks	5 00	
Janitor for Dairy Building	240 00	
Labor for Division	1,799 58	
Half Dozen Milk Pails	5 00	
White Suits for Milkers	15 00	
Feed for Cattle and Hogs	2,000 29	
Moving Engine	8 75	
Janitor Supplies	20 69	
Four Door Closers	19 50	
Set of One Horse Harness	20 00	
Tables, Shelving, etc.	25 00	
Two Cement Silos and Four Tops	780 40	
Fences at New Barn	216 09	
Freight on Equipment (Barn)	289 03	
Pure Bred Pigs	123 30	
Jack and Jennets	1,497 06	
		7,478 18

Botany and Bacteriology Division—

Reference Books	$43 42	
Repairs and Changes in Plumbing	25 98	
Botanical Publications	23 80	
Glass Ware and Laboratory Supplies	100 01	
Labor	78 35	

Instruments	150 13	
Laboratory Chairs and Stools	75 00	
Student's Desks and Tables	50 00	
Storage Cases	76 64	
		623 33

Entomology and Zoology Division—

Perishable Class Materials, Worms, Snakes, etc.	$52 30	
Chemicals and Class Materials	49 84	
Labor	47 63	
Insect Cases for Class	37 50	
Five Microscopes	149 76	
		337 03

Geology and Mineralogy Division—

Chemical Laboratory Supplies and Repairs	$75 09	
Labor	6 60	
Apparatus and Supplies for One Year Course	47 47	
		129 16

Horticulture Division—

Labor	$1,218 20	
Fertilizers	146 53	
Seeds, Plants, etc.	50 00	
Greenhouse Supplies	47 09	
Coal for Green House	71 50	
Packing Material, Crates, etc.	39 02	
Small Tools for Class Use	34 97	
Hand Tools and Implements	30 47	
Repairs to Green House	34 90	
Laboratory Equipment for Classes	74 75	
Tables and Shelves for Laboratory	17 00	
Spray Apparatus and Materials	48 15	
Seed Implement and Tool House	397 03	
		2,209 61

Office and Unclassified, Agriculture Division—

Janitor's Wages	$238 00	
Janitor Supplies	36 77	
Gasoline	110 05	
Travel Expenses of Director	77 13	
Stationery, Postage, etc., for Department	388 80	
Up-keep of Building	51 50	
Student Labor	277 50	
Expenses Attending Conventions, etc.	135 64	
Additional Office Furniture	44 80	
Gas Burners	139 60	
		1,499 79

Veterinary Science Division—

Feed for Animals at Veterinary Hospital	$374 90	
Drugs and Hospital Supplies	103 97	
Janitor and Extra Labor	265 00	
Veterinary Journals	10 00	
Coal	29 48	
Laboratory Supplies for Class Work	39 90	
Gasoline for Gas Machine	31 82	
Rent of Telephone	36 00	
Repairs and Replacement of Apparatus	40 02	
New Fence and Repairs to Fence	75 24	
Operating Table	225 00	
		1,231 33

Farm Division—

Free Labor	$2,259 41	
Work-boy Labor	1,600 82	
Fertilizers	2,000 99	
Plants, Seeds, Supplies, etc.	305 70	
Blacksmithing, Repairing	107 15	
Grease, Oil, Paint and Gasoline	150 82	
Wagon and Hay Frames	143 70	
Tools and Implements	318 33	
Belting	49 47	
Tiling for Bottom Lands	102 00	
Well and Pump near Fort Rutledge	71 16	
Implement Shed near Fort Rutledge	199 67	
New Fences	511 93	
General Improvements and Pastures	1,772 60	
		9,593 75

Salary Division—

Salaries—Director and Assistants	$18,843 89	
		18,843 89
Department Expenditures		$42,259 28

CHEMICAL DEPARTMENT.

Chemistry Division—

Charcoal	$4 88	
Apparatus	649 51	
Chemicals	229 84	
Gasoline	167 88	
Books and Journals	79 99	
Binding Books and Journals	14 30	
Replacing Old Sinks	15 25	
Repairs to Hoods, Flumes, etc.	9 74	
Incidentals	89 75	
Labor—Janitor	120 00	
Delegate to Association Agricultural Chemists	60 00	
Equipment for Department Library	39 75	
Tables and Chairs for Department Library	30 00	
Water Line to Phosphate Acid Room	11 80	
		$1,522 69

Salary Division—

Salaries—Director and Assistants	$6,176 50	
		6,176 50
Department Expenditures		$7,699 19

ENGINEERING DEPARTMENT.

Civil Engineering Division—

Class Materials and Repairs, etc.	$34 37	
Repairing and Changing Windows, etc.	25 00	
Black Boards and Seating	10 75	
Instruments, Scales and Triangles	35 00	
Filing Cabinet	24 89	
Universal Drawing Machine	50 00	
		$180 01

Mechanical and Free Hand Drawing Division—		
Materials, as Ink, Paper, etc..	$39 09	
Repairs and Renewals of Apparatus	42 85	
Mechanical and Free Hand Models	61 77	
**Miscellaneous Small Instrument .. ..

Office and Unclassified, Engineering Division—

Labor	$229 90	
Office and Janitor Supplies	149 98	
Incidental Repairs to Engineering Building	4 68	
Record Books	9 95	
Repairs to Typewriter	**15 00**	
Filing Case	40 00	
		449 51

Wood Shop Division—

Labor	$314 98	
Supplies as Lumber, Hardware, Paint, etc.	400 02	
Repairs and Replacement of Tools, Machines, Belting, etc.	149 96	
Painting in Class Room	29 99	
Lathe Tools	48 22	
Freshman Work Benches	100 00	
		1,043 17

Salary Division—

Salaries—Director and Assistants	$20,851 50	
		20,851 50
Department Expenditures		$25,819 30

MILITARY DEPARTMENT.

Office and Unclassified, Military Division—

Postage, Stationery, Record Books, etc.	$257 21	
Band Instruction	88 20	
Cadet Officer's Insignia	294 12	
Band Instruments	92 50	
		$732 03

Salary Division—

Salaries—Commandant, Assistant Commandant and Assistants	$3,762 22	
		3,762 22
Department Expenditures		$4,494 25

TEXTILE DEPARTMENT.

Carding and Spinning Division—

Cotton for Class Use	$91 13	
Repairs and Supplies	45 75	
Materials for Cotton Grading	50 18	
One Single Cylinder Slasher	640 83	
		$827 89

Dyeing Division—

Chemicals and Dye Stuffs	$99 97	
Glassware and Laboratory Materials	49 82	

TREASURER'S REPORT—CLEMSON—FOUR

Changes in Laboratory	19 08	
Miscellaneous Small Laboratory Apparatus	100 84	
		269 71

Office and Unclassified, Textile Division—

Janitor and Engineer	$349 50	
Gasoline	32 55	
Stationery, Postage, etc.	39 77	
Freight on Donated Machinery	131 61	
Student Labor	74 11	
		627 54

Weaving Division—

Warp and Filling Yarns	$250 42	
Loom Supplies and Repairs	114 27	
Samples for Cloth Analysis	12 44	
		377 13

Salary Division—

Salaries—Director and Assistants	$5,412 46	
		5,412 46
Department Expenditures		$7,514 73

PUBLIC UTILITIES DEPARTMENT.

Construction and Repairs Division—

Office Supplies, Postage, etc.	$49 63
Repairs and Renewals of Apparatus	25 10
Lockers and Shelves in Superintendent's Office	44 35
Tools and Implements	25 00
Painting and Kalsomining Public Buildings	69 72
Painting Tin Roofs on Public Buildings	200 00
Repairs to Textile Building Roofs	389 99
Repairs to Slate Roofs on Public Buildings	45 60
Repairs to Veterinary Hospital	114 70
Miscellaneous Unforeseen Repairs to Public Buildings	498 78
Inside Painting and Repairs to Barracks No. 1	135 00
Inside Repairs to Commandant's House	125 26
Painting Iron Gangways, Barracks 1, 2 and 3	86 91
Repairs to Agricultural Department Greenhouse	183 79
Internal Repairs, etc., to Calhoun Mansion	2 50
Two New Residences	4,053 85
Extension of Barrack's Kitchen	1,997 05
Extension of Bakery and Dishwasher Rooms	1,148 00
Additional Class Room to Chemical Department	262 17
Picture Moulding in Halls, Main Building	49 97
Window Cords and Pulleys (Dargan)	10 64
Closet in Back Room (Dargan)	8 08
Window Cord and Pulleys (Schilletter)	10 09
Blinds (Taylor)	31 79
Kitchen in Cellar (Gillison)	53 49
Steps at end of Porch (Riggs)	5 60
Window in Dining Room (Evans)	7 18
Moving Implement Shed and Remodelling Experiment Station Barn for Farm Machinery Division	126 24
Additional Room to Stockade	86 20
Door and Partition to Textile Building	19 90
Changing Old Dairy into Residence	1,124 70
Fire Doors and Escapes	79 29
New Room to Residence (Shanklin)	319 77

New Room to Residence (Bryan)	320 18	
Ceiling Two Rooms (Shelton)	7 50	
Porch (Shelton)	49 99	
Connecting Door (Bradley)	23 52	
Pantry Between Dining Room and Pantry (Harper)	25 31	
Raise Left Half Porch (Lewis)	13 84	
Close up Under Barrow House	25 54	
Paper Three Rooms and Cut Two Openings (Brackett)	75 00	
Toilet and Bath in Annex-Hotel	634 02	
Roof and Repairs (Conradi)	49 44	
Stock Room Chemical Laboratory	74 43	
Two Wells and Completing One Well	128 58	
Pump for Hotel	57 40	
		$12,875 09

Convicts Division—

Three Convict Guards	$1,200 00	
Board, Clothing, Trans. and Hire	3,101 41	
One Cooking Range	13 76	
Tools, Repairs, Mule Shoeing, etc.	216 62	
		4,531 79

Heat, Light and Water Division—

Coal	$2,849 99	
Labor	1,847 55	
Material, Repairs and Extensions	1,439 70	
Painting Stand Pipe	71 03	
Additional Fire Hose	121 25	
Water and Sewer Lines to New Residences	179 72	
		6,509 24

Printery Division—

Gasoline, Oil, Ink, etc.	$70 50	
Labor	195 88	
Mailing Catalogues and Bulletins	21 54	
Repairs	49 68	
Linotype Metal for Catalogue	88 30	
Type, Matrices, etc.	36 47	
		462 37

Campus and Roads Division—

Labor—Campus Gardener	$317 00	
Drain Pipe, Fertilizer, etc.	500 00	
Bridge and Culvert on Cherrys Road	500 00	
Cement Walks and Roads	1,491 63	
		2,808 63

Salary Division—

Salaries—Superintendent Construction and Repairs, Teamster, Plumber, etc.	3,399 96	
		3,399 96
Department Expenditures		$30,587 08

MISCELLANEOUS DEPARTMENT.

Barracks Maintenance and Equipment Division—		
250 Chairs for Barracks Rooms		$362 50
50 New Mattresses		175 00
Waiters, Pots, Dishpans, etc		99 00
Repairs to Ovens, Range, Machinery		100 00
One Additional Range Section		175 00
Two Steam Roasters		134 80
One Copper Soup Pot		100 00
One China Storage Closet	35 00	
		$1,181 30
Contingent Division—		
Contingent and Incidental Expenses	$994 82	
		994 82
Executive and Clerical Salaries Division—		
Salaries—President, Treasurer, Bookkeepers, Registrar, Librarians, Clerks, etc	$12,474 72	
		12,474 72
Hospital Maintenance and Equipment Division—		
Furniture, Utensils, Screening, etc	$41 90	
		41 90
Insurance Division—		
Insurance Premiums	$3,000 00	
		3,000 00
Library Division—		
Binding	$100 00	
To Complete Library Catalogue	100 00	
Books	488 54	
Magazines	150 00	
Cards, Stationery, Stacks, etc	94 24	
		932 78
Miscellaneous Items Division—		
College Catalogue	$378 52	
Annual Report to Legislature	160 90	
Lyceum Lectures	400 00	
Commencement Expenses	357 71	
Trustees Medal	25 00	
Dues to Association Agricultural Colleges	35 00	
Supplies for Museum	23 85	
Supplies for Gymnasium	45 15	
Repairs to Trustees Carriages	27 00	
Upkeep Telephone System	59 90	
Changes in Telephone Lines	100 00	
Additional Gymnasium Apparatus	12 00	
Sprinkler System Chapel	129 46	
Speciments for Museum	4 00	
Old S. C. Map and J. C. C.'s Picture	6 00	
Lightning Rods for Local School	24 50	
Repairs to Phone Line to Calhoun	50 00	
		1,838 99

President's Office Division—

Stamps, Stationery, etc..	$996 71	
Traveling Fund (President and Others in South Carolina)	276 21	
Emergency Student Labor	149 61	
		1,413 53

Religious Services Division—

Ministers	$2,101 61	
Salary Y. M. C. A. Secretary	500 00	
Sunday School Literature	37 88	
		2,639 49

Treasurer's Office Division—

Record Books, Postage, Stationery, etc..	$424 87	
Emergency Assistance	268 52	
Treasurer's Bond	75 00	
Treasurer's Annual Report	200 00	
Audit of Treasurer's Books	260 82	
Office Chairs	23 25	
		1,252 46

Trustees Expenses Division—

Expenses of Trustees and Board of Visitors	$990 29	
		990 29

Watchmen Division—

Two Night Watchmen	$960 00	
Watchmen Supplies	15 92	
		975 92
Department Expenditures		$27,736 20

SUMMARY.

Expenditures By Departments—

Public State Work Department	$100,889 94	
Academic Department	25,283 44	
Agricultural Department	42,259 28	
Chemical Department	7,699 19	
Engineering Department	25,819 30	
Military Department	4,494 25	
Textile Department	7,514 73	
Public Utilities Department	30,587 08	
Miscellaneous Department	27,736 20	
		$272,283 41

AUDITOR'S REPORT.

CLEMSON COLLEGE, S. C., August 18, 1913.

To the Honorable Board of Trustees (through the President).

GENTLEMEN:—As directed by your Finance Committee, I have made a thorough examination and audit of the books and accounts of the Treasurer's office of the Clemson Agricultural College for the year commencing July 1st, 1912, and ending June 30, 1913.

My understanding is that the purpose of this audit is to place before the Board of Trustees (and the public generally, if the Board sees fit to publish the report,) in as simple and concise form as possible the true status of the books and accounts in the Treasurer's office of the Clemson Agricultural College. Assuming that this is the desire of your Committee, I have classed the accounts into five schedules, as follows:

Schedule 1.—The Clemson Agricultural College.
Schedule 2.—Cadet Fund.
Schedule 3.—S. C. Experiment Station.
Schedule 4.—Cadet Deposit Account.
Schedule 5.—Petty Ledger Account.
To which I have added:
Schedule 6.—Recapitulated Cash Statement.
Schedule 7.—Balance Sheet to June 30, 1913.

I have charged the Treasurer with all balances on hand June 30, 1912. I have checked and re-added each and every receipt in sub-division of the accounts, the compilation of which establishes his liability.

I have checked and re-added each and every voucher, the aggregate of which constitutes the credits to which he is entitled.

I have checked the debits and credits to the books, and find them correct.

I have listed all the receipts and vouchers, setting forth in detail the receipts and disbursements in each sub-division of each account, and submit herewith Exhibits "A" to "H," inclusive, covering the debits and credits. The same, being too voluminous to be incorporated herein, are attached hereto and made to form a part of this report. Schedule 6 shows in detail the balance to the

credit of each account on June 30, 1913. I have verified the balances as shown by the bank certificates June 30, 1913, with the balances shown by the ledgers June 30, 1913, and find them correct. I have made a thorough examination of all appropriations, checking the same into the ledger, and find that it has been handled as directed by your Board. I have also verified the items charged against the appropriation sheet, and find them correct.

I can conscientiously reiterate what I have said in my reports for the past two years, that the books are correct, neat, and accurate, and systematically kept; and the office is in perfect condition, reflecting much credit upon your worthy Treasurer, Dr. P. H. E. Sloan, and his efficient assistants, Mr. S. W. Evans and Mr. F. L. Carroll, who keep in close touch with every detailed transaction of the office.

I was assisted in this audit by Mr. J. B. Haltiwanger, who rendered me valuable and efficient assistance.

I beg to extend to the officers my thanks and appreciation for courtesies extended me.

Respectfully submitted,

DAVE H. WISE,
Accountant.

THE CLEMSON AGRICULTURAL COLLEGE RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDING JUNE 30, 1913.

SCHEDULE 1.

	Dr.	Cr.
Balance on Hand June 30, 1912	$4,937 51	
Received From Privilege Tag Tax	231,500 00	
Received From Morrill Fund	25,000 00	
Received From Clemson Bequest	3,512 36	
Received From Landscrip	5,754 00	
Received From Tuition	5,840 00	
Received From Miscellaneous	8,994 46	
By Tuition Refunded		$790 00
By Checks College Ledger		272,283 41
Balance on Hand		12,464 92
	$285,538 33	$285,538 33

CADET FUND.

SCHEDULE 2.

	Dr.	Cr.
Balance on Hand June 30, 1912	$10,037 98	
Cadet Fees Refunded	4,795 30	
Receipts $118,522.06, less $4,795.30 as above	113,736 76	
By Checks		$121,069 46
Balance on Hand		7,500 58
	$128,570 04	$128,570 04

THE SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION.

SCHEDULE 3.

	Dr.	Cr.
Balance on Hand June 30, 1912	$2,064 82	
Received From Hatch Fund	15,000 00	
Received From Adams Fund	15,000 00	
Received From Farm Products	1,681 02	
Paid Checks From Hatch Fund		$15,000 00
Paid Checks From Adams Fund		15,000 00
Paid Checks From Farm Products		3,599 01
Balance on Hand		146 83
	$33,745 84	$33,745 84

CADET DEPOSIT ACCOUNT.

SCHEDULE 4.

	Dr.	Cr.
Balance on Hand June 30, 1912	$4 58	
Receipts	54,111 59	
Paid Student Checks		$53,157 26
Balance on Hand		958 91
	$54,116 17	$54,116 17

PETTY LEDGER OR REINVESTMENT ACCOUNTS.

(Balance Brought Forward, $1,313.11 from 1912, included in Receipts.)

SCHEDULE 5.

	Receipts	Disbursements	Dr.	Cr.	Net Cr.
Animal Husb'y and Dairy	$309 91	$309 91			
Board of Health	71 25	19 00		$52 25	
Chemical Department	36 10	36 10			
Coast Station	1,832 95	1,971 80	138 85		
Dairy	4,413 48	4,413 48			
Farm	868 22	868 22			
Forge and Foundry	6 65	6 65			
Horticulture	237 25	237 25			
Heat, Light and Water	1,556 08	1,556 08			
Hog Cholera Serum Work	2,818 11	2,595 90		222 21	
Insurance	900 94	900 94			
Interest	1,478 89	1,478 89			
Magistrate Fines	35 00	35 00			
M'f'g State Flags	131 43	371 58	240 15		
Miscellaneous	88 26	88 26			
Norris Medal	39 55	39 50			05
Printery	2,296 68	2,381 88	85 20		
Rents	4,413 56	3,250 91		1,162 65	
Scholarships	42 50	42 50			
Veterinary Hospital	621 52	621 52			
Textile Department	75	75			
Wood Shop	4 70			4 70	
	$22,203 78	$21,226 12	$464 20	$1,441 86	$977 66

RECAPITULATED CASH STATEMENT, JUNE 30, 1913.

SCHEDULE 6.

College Cash Balance June 30, 1913	$12,464 92	
Cadet Fund Cash Balance June 30, 1913	7,500 58	
S. C. Expt. Sta. Cash Bal. June 30, 1913	146 83	
Cadet Deposit Cash Bal. June 30, 1913	958 91	
Reinvestment Cash Bal. June 30, 1913	977 66	
Checks out June 30. 1913	16,620 62	
		$38,669 32

Certificates of Deposits—

Bank of Anderson	2,000 00	
Farmers and Merchants' Bank	2,000 00	
Pickens Bank	2,000 00	
Bank of Sumter	2,000 00	
National Bank of Newberry	2,000 00	
National Bank of Abbeville	2,000 00	
Farmers' Bank	2,000 00	
People's Savings Bank	2,000 00	
Exchange Bank	2,000 00	
Bank of McCormick	2,000 00	
Bank of Pendleton (College Acct.)	15,526 20	
Bank of Pendleton (S. C. Ext. Sta. Acct.)	645 78	
Bank of Pendleton (Reinvestment Acct.)	1,538 63	
Cash in Office	958 91	
		$38,669 52

BALANCE SHEET OF THE CLEMSON AGRICULTURAL COLLEGE, JUNE 30, 1913.

SCHEDULE 7.

The College—

	Dr.	Cr.	Cr. Balance Cash.
Bal. on Hand June 30, 1912	$4,937 51		
Received From Priv. Tax	231,500 00		
Rec'd From Morrill Fund	25,000 00		
Rec'd From Clemson Beq't	3,512 36		
Received From Landscrip	5,754 00		
Received From Tuition	5,840 00		
Rec'd From Miscellaneous	8,994 46		
By Tuition Refunded		$790 00	
By Checks		272,283 41	
By Balance			$12,464 92

Cadet Fund—

Bal. on Hand June 30, 1912	10,037 98		
Receipts $118,532.06, less $4,795.30 fees refunded	113,736 76		
Cadet Fees Refunded	4,795 30		
By Checks		121,069 46	
By Balance			7,500 58

S. C. Expt. Station—

Bal. on Hand June 30, 1912	2,064 82		
Rec'd From Hatch Fund	15,000 00		
Received From Adams Fund	15,000 00		
Rec'd From Farm Products	1,681 02		

By Checks Hatch Fund..		15,000 00		
By Checks Adams Fund ..		15,000 00		
By Checks Farm Products		3,599 01		
By Balance			146 83	
Cadet Deposit Account—				
Bal. on Hand June 30, 1912	4 58			
Receipts	54,111 59			
By Checks		53,157 26		
By Balance			958 91	
Reinvestment Account—				
Bal. on Hand June 30, 1912, $1,313.11, absorbed in receipts	22,203 78			
By Checks		21,226 12		
By Balance			977 66	
	$524,174 16	$502,125 26	$22,048 90	
Checks out College Ledger			15,560 70	
Checks out Expt. Station			498 95	
Checks out Reinvestment Fund			560 97	
Bank Certificates, $37,-710.61; cash in office, $958.91				38,699 52
			$38,669 52	$38,669 52

FERTILIZER INSPECTION AND ANALYSIS.

Clemson College, S. C., June 30th, 1913.

Dr. W. M. Riggs, President, C. A. C.

Dear Sir: I respectfully submit the following summary of the work of the fertilizer department for the fiscal year ending June 30, 1913.

Owing to very rainy season commencing in winter months and extended well into spring, the sale and movement of fertilizers to the interior were delayed at least two weeks later than usual, and as all this distribution was practically condensed within the months of February, March and April, it necessarily forced the inspection work to be made intensive and thorough as possible. This work was again this season carried on by 12 inspectors under the supervision of a chief, each assigned a division. Before starting on the work, these were called together for instruction and demonstration in the methods necessary for the intelligent and efficient performance of their duties; and after subscribing to an oath for the faithful and impartial discharge of the same, all entered loyally on the work February the first. Our records show that during the season, these inspectors traveled 38,098 miles, visited 1,697 depots, collected 2,411 samples of 1,129 different brands of fertilizers found in the State. Of these 1,922 have been sent to the chemists and their analyses reported rapidly as made in weekly bulletins to close of the season May the first.

For purposes of comparison with last season, the following exhibit is submitted; viz:

	1912-13	1911-12
No. of tons fertilizer (other than C. S. Meal) sold	815,212	778,142
No. of tons cotton seed meal sold	103,123	108,080
No. of samples collected	2,411	2,248
No. of samples analyzed	1,922	1,698
No. of samples found deficient 3 per cent. or more	116	97
No. of farmers' samples analyzed	139	59

To the credit of the privilege tax this season was also collected and paid into State treasury $2,801.13, penalties for deficient samples and violations of fertilizer laws.

From the growing number of inquiries received and character of the correspondence, it is gratifying to note an increased appreciation by the farmers of the help given by this department in the purchase of commercial fertilizers of a higher grade, and a more discriminating choice of the materials used in their manufacture. The samples now found and taken on the open market show the lower grades formerly in popular use are being displaced by those of a higher grade, concentrating in one ton the same amount of plant food formerly found in two or more, thus saving cost of freight, hauling and handling; while more regard is had as to the value of this plant food dependent on the availability of sources from which derived, and its adaptability to the different crops. Collaborating with results found by field tests at the stations, the department hopes to become yet more useful to the farmers along these lines, and will spare no effort to assure these fertilizers shall be as good as the best. Manufacturers in the main have shown commendable care in maintaining a higher standard of availability, as evidenced by smaller number thus far found below that required in the materials used, and we think final results will warrant further raise of this standard after a close of this season.

Further results of the season's operations will be found in the detailed and classified report of our Chief Chemist which will appear in our large annual bulletin. The expense of this department was $31,069.73, as will appear in itemized statement of the Treasurer to which I respectfully refer.

Respectfully submitted,

H. M. STACKHOUSE.

ANNUAL REPORT OF THE ANALYTICAL WORK
OF THE
CHEMICAL DEPARTMENT FOR 1912-1913.

Clemson College, S. C., July 15th, 1913.

Dr. W. M. Riggs, President Clemson College, S. C.

Dear Sir: I respectfully submit the following report of the work on commercial fertilizers, waters, etc., done for the Board of Fertilizer Control and for the citizens of the State during the year ending June 30th, 1913. The growth of the work is shown by comparative figures for the preceding year:

	1911-1912	1912-13
Official samples of fertilizers	1,698	1,928*
Farmers' samples of fertilizers	59	139
Waters	100	100
Ores and minerals	36	27
Marls	3	1
Limestones	0	4
Soils	8	2**
Miscellaneous	20	4
	1,924	2,205

OFFICIAL SAMPLES OF FERTILIZERS.

Classification.

	1911-1912	1912-1913
Complete fertilizers	960	1,199
Home mixtures	10	8
Special mixtures	0	2
Acid phosphates	180	176
Acid phosphates with potash	116	85

*For good and sufficient reasons, the Secretary of the Board of Fertilizer Control did not publish six of these analyses.

**The analysis of soils is now done under the direction of the Director of the Experiment Station.

Cotton seed meals	153	171
Kainits	69	69
Kainits (hardsalts)	4	10
Manure salts	1	4
Muriate of potash	47	29
Muriate of potash mixtures	1	3
Sulphate of potash	8	4
Nitrate of soda	76	48
Dried blood	6	11
Fish scrap	17	19
Tankage	10	12
Acid fish	1	0
Sulphate of ammonia	0	2
Bone meal	3	1
Basic slag	8	5
Whale guano	0	16
Miscellaneous	19	48
	1,689	1,922

Deficient Samples.

Of the 1,922 samples above classified only 1,889 are included in this discussion of the deficients.

Of the thirty-three samples omitted from consideration:

Three were cotton seed meals: one without guarantee; and two Sea Island meals.

Five were fertilizer sweepings.

One was Peruvian screenings.

Ten were "nitrogenous manures."

One each: "Organic manure," fish meat, meat meal, castor meal, "mowrah meal," herring guano, fish tankage, Lee's prepared lime, a double super-phosphate, a phosphate (acid), which had been under water.

Two each: Leather meals and "beet root manure."

Of these 1,889 samples, 235 fell below the commercial value based on the guarantee. They were as follows:

In available phosphoric acid	55
In available phosphoric acid and potash	2
In available phosphoric acid and ammonia	16
In ammonia and potash	38
In ammonia	100
In potash	19
In available phosphoric acid, ammonia and potash	5
	235

Last season out of 1,661 samples 209 or 12.58 per cent. were deficient in commercial value based on guarantee, while this season the number so deficient amounted to 12.44 per cent.

The extent to which these 235 samples fell below the guaranteed analysis in per cent. was as follows:

	0-.1	.1-.25	.25-.50	.50-1	1 and over
In available phosphoric acid	7	17	.20	27	7
In ammonia	9	39	53	42	16
In potash	5	9	19	18	13
	21	65	92	87	36

Of the 235 samples which fell below the commercial value based on the guarantee, 114 fell three per cent. or more below that value. They are as follows:

In available phosphoric acid	23
In available phosphoric acid and potash	7
In available phosphoric acid and ammonia	9
In ammonia and potash	21
In ammonia	40
In potash	10
In available phosphoric acid, ammonia and potash	4
	114

Last season out of the 209 samples which were deficient in commercial value based on guarantee, 97 or 46.4 per cent. were three per cent. or more deficient, while this season the number so deficient amounted to 48.5 per cent.

In addition to the 235 samples which were deficient in commercial value based on guarantee, there were 389 samples below guarantee in one or more constituents, the deficiency being made up, however, by an excess of other ingredients. They were as follows:

In available phosphoric acid	92
In available phosphoric acid and potash	6
In available phosphoric acid and ammonia	2
In ammonia	190
In ammonia and potash	9
In potash	90
In available phosphoric acid, ammonia and potash	0
	389

The extent to which these 389 samples fell below guaranteed analysis in per cent. was as follows:

	0-.1	.1-25	.25-.50	.50-1	1 and over
In available phosphoric acid ...	11	34	31	20	4
In ammonia	68	96	35	2	0
In potash	13	40	31	20	1
	92	170	97	42	5

Out of 1,661 samples last season 380 were deficient in one or more ingredients, or about 22.9 per cent., while this season the number of such samples so deficient amounted to about 20.6 per cent.

In connection with the subject of deficient samples, the following results of the analyses this season appear to warrant special mention:

Acid Phosphates:

	1911-1912	1912-1913
Guaranteed 16 per cent.	112	135
Deficient	47 (41.96%)	39 (28.88%)
Deficient 3 per cent. or more..	18 (16.07%)	17 (12.59%)
Guaranteed 14 per cent.	38	23
Deficient	8 (21.05%)	2 (8.69%)
Deficient 3 per cent. or more	4 (10.52%)	1 (4.35%)

The number of samples analyzed this season with a guarantee of 13 per cent. was 16, of which 2 only were deficient and one was deficient three per cent. in relative commercial value. Two samples were also analyzed with a guarantee of 12 per cent., both of which were up to their guarantee. These results show a distinct improvement in the quality of these goods over those which fell into our hands last season.

Acid Phosphates With Potash:

	1911-1912	1912-1913
Guaranteed 10-4	64	53
Deficient	23 (35.93%)	24 (45.26%)
Deficient 3 per cent. or more	12 (18.75%)	7 (13.20%)
Guaranteed 10-2	29	20
Deficient	3 (10.34%)	6 (30%)
Deficient 3 per cent. or more	2 (6.90%)	(1 (5%)

There were also analyzed this season 8 samples guaranteed 8-4, of which two only were deficient and neither was as much as three per cent. deficient in relative commercial value. Of two samples guaranteed 12-6, both were deficient and one was 8.50 per cent. deficient in relative commercial value. There was one sample each guaranteed 10-5 and 10-6, both of which were deficient but not below their guaranteed commercial value.

The deficiencies by ingredients were as follows:

	1911-1912		1912-1913	
	10-4	10-2	10-4	10-2
In available phos. acid ..	5	1	6	3
In available phos. acid and potash	4	1	1	1
In potash	44	11	17	2

These results show a slight falling off in the quantity of phosphoric acid furnished in the goods of this kind, but a very great improvement over last season in the amount of potash found in them. In connection with the potash deficiency not only in acid phosphates with potash, but also in other mixed fertilizers, the following summary for the last nine years is interesting. It is to be noted that none of the deficient samples here quoted were deficient in relative commercial value:

Year	Number of Samples	Deficient in One or more Ingredients	Deficient in Potash only	Deficient in Potash Per Cent.
1905	522	165	53	32.12
1906	655	201	62	30.84
1907	743	153	34	22.22
1908	713	161	54	33.54

1909	805	197	85	43.14
1910	1,188	235	86	36.60
1911	1,605	393	182	46.31
1912	1,689	380	225	59.21
1913	1,922	389	90	23.13

This summary shows that, during the period between 1905 and 1912, a large number of samples were deficient in potash; that the deficiencies in potash increased, especially during the last four years of this period, though most notably in the last two years of the period; finally, that the results this season show a most gratifying improvement, in the falling off of the potash deficiencies.

Top Dressers:

In my last annual report special attention was called to certain top dressers, not only because many of them were deficient in one or more ingredients, particularly in ammonia, but because so many of them were three per cent. or more deficient in relative commercial value. In view of the very great improvement found in the quality of these goods as shown by the analyses this season, it seems worth while to give a comparison of the results obtained during the last two seasons of at least two types of these goods, which were considered in the last annual report:

	1911-1912		1912-1913	
	4-7½-2½	9-3	4-7½-2½	9-3
Number of samples 16		7	20	13
Deficient 11		5	11	4
Deficient 3 per cent. or more 10		4	3	2
The deficiency of these samples was as follows:				
In available phosphoric acid	0	..	0	..
In available phosphoric acid and potash	0	..	0	..
In available phosphoric acid and ammonia	1	..	0	..
In ammonia and potash ...	2	0	0	1
In ammonia	10	5	10	2
In potash	1	0	1	1

AVERAGES OF ANALYSES.

	1911-1912. Per Cent.		1912-1913. Per Cent.	
	Found.	Guaranteed.	Found.	Guaranteed.
ACID PHOSPHATES—				
Available phosphoric acid	15.42	15.14	15.83	15.32
Insoluble phosphoric acid	0.41	.....	0.45	.....
Total phosphoric acid	15.83	.....	16.28	.....
ACID PHOSPHATES WITH POTASH—				
Available phosphoric acid	10.68	9.92	10.43	9.86
Insoluble phosphoric acid	0.52	.....	0.48	.....
Total phosphoric acid	11.20	.....	10.91	.....
Potash soluble in water	3.25	3.51	3.63	3.62
COMPLETE FERTILIZERS—				
Available phosphoric acid	9.07	8.14	8.86	7.96
Insoluble phosphoric acid	0.92	.....	0.89	.....
Total phosphoric acid	9.99	.....	9.75	.....
Ammonia	3.46	3.23	3.54	3.23
Potash soluble in water	3.22	3.02	3.57	3.14
COTTON SEED MEALS—				
Available phosphoric acid	2.17	1.53	2.56	1.51
Ammonia	7.54	7.04	7.37	7.01
Potash soluble in water	1.58	1.02	1.65	1.01
KAINITS—				
Potash soluble in water	14.04	12.05	13.72	12.00
MURIATE OF POTASH—				
Potash soluble in water	50.42	48.53	51.51	48.62
SULPHATE OF POTASH—				
Potash soluble in water	49.73	48.37	50.99	48.25
NITRATE OF SODA—				
Ammonia (equivalent)	18.55	18.02	18.64	18.02

The following table shows the yearly averages of fertilizer analyses from the time the Board of Trustees of the Clemson Agricultural College of South Carolina took charge of the fertilizer inspection down to the present time, or from 1891 to 1913, inclusive:

YEARLY AVERAGE OF ANALYSES FROM 1891 TO 1913, INCLUSIVE.

Season.	Acid Phosphates.		Acid Phosphate With Potash.			Complete Fertilizer.				Cotton Seed Meals.				Kainits.		Muriate Potash.		Nitrate of Soda.	
	Number of Samples.	Available Phosphoric Acid—Per Cent.	Number of Samples.	Available Phosphoric Acid—Per Cent.	Potash Soluble in Water—Per Cent.	Number of Samples.	Available Phosphoric Acid—Per Cent.	Ammonia—Per Cent.	Potash Soluble in Water—Per Cent.	Number of Samples.	Available Phosphoric Acid—Per Cent.	Ammonia—Per Cent.	Potash Soluble in Water—Per Cent.	Number of Samples.	Potash Soluble in Water—Per Cent.	Number of Samples.	Potash Soluble in Water—Per Cent.	Number of Samples.	Ammonia—Per Cent.
1890-1	49	13.02	19	11.84	1.65	173	9.34	2.68	1.96	30	....	8.37	....	21	12.75	1	51.96	1	19.22
1891-2	29	12.92	16	11.50	1.49	112	8.83	2.80	1.95	25	....	8.21	....	18	12.51	..	.....	1	18.63
1892-3	48	12.32	26	11.63	1.22	150	9.00	2.91	1.65	20	2.62	8.40	1.32	20	12.05	..	.....	..	.....
1893-4	46	13.24	22	12.01	1.51	132	9.27	2.53	1.79	22	2.45	8.64	1.69	17	12.37	..	.....	..	.....
1894-5	46	13.55	15	12.09	1.66	87	9.42	2.55	1.77	33	2.58	8.19	1.66	19	12.30	..	.....	..	.....
1895-6	42	13.43	26	11.99	1.39	115	9.31	2.64	1.86	34	2.57	8.45	1.61	16	12.45	..	.....	..	.....
1896-7	59	13.61	34	12.06	1.61	117	9.55	2.70	1.91	40	2.53	8.69	1.64	22	12.44	..	.....	..	.....
1897-8	63	13.67	50	11.54	2.06	141	9.15	2.70	1.93	39	2.37	8.39	1.58	20	12.68	..	.....	1	19.23
1898-9	73	13.74	68	11.77	1.99	134	9.32	2.73	2.21	40	2.76	8.25	1.75	14	12.78	2	51.93	2	18.96
1899-1900	73	13.58	63	11.58	2.00	124	9.50	2.73	2.13	52	2.27	8.73	1.63	8	12.73	4	50.95	3	19.01
1900-1	56	14.00	55	11.49	2.65	139	9.40	2.87	2.47	60	2.38	8.55	1.54	12	12.61	2	48.92	3	18.96
1901-2	45	14.11	51	11.09	2.55	141	9.39	2.84	2.34	49	2.57	7.93	1.63	16	12.85	4	50.54	3	19.03
1902-3	51	13.74	55	10.94	2.65	139	9.02	2.69	2.42	69	2.27	8.08	1.48	15	12.92	2	50.25	2	19.15
1903-4	59	14.32	75	11.12	2.81	180	9.12	2.99	2.90	57	2.28	7.92	1.54	11	12.94	7	49.79	6	18.87
1904-5	81	14.81	82	10.70	3.07	250	9.19	3.12	2.90	62	2.41	7.42	1.54	26	12.54	6	50.49	7	18.73
1905-6	87	14.95	94	10.97	3.30	375	9.34	3.26	2.98	71	2.42	7.51	1.57	29	12.83	13	50.05	19	18.67
1906-7	111	14.95	72	10.76	3.21	390	8.91	3.29	3.29	99	2.68	7.32	1.69	30	12.78	13	51.52	20	18.49
1907-8	91	14.71	64	10.57	3.54	363	9.17	3.01	3.01	114	2.37	7.40	1.61	39	12.91	15	51.04	17	18.33
1908-9	108	15.02	80	10.55	2.93	396	9.26	3.03	3.08	115	2.39	7.27	1.71	45	13.03	14	50.46	21	18.26
1909-10	159	15.18	74	10.16	3.54	599	8.89	3.31	3.34	133	2.37	7.20	1.67	73	13.10	26	50.96	40	18.10
1910-11	187	15.39	101	10.62	3.48	942	9.00	3.34	3.33	177	2.46	7.26	1.59	63	13.00	24	50.18	50	18.46
1911-12	180	15.42	116	10.68	3.25	960	9.07	3.46	3.22	153	2.17	7.54	1.58	69	14.04	47	50.42	76	18.55
1912-13	176	15.83	85	10.43	3.63	1,199	8.86	3.54	3.57	171	2.56	7.37	1.65	69	13.72	29	51.51	48	18.64

In this table, as in the preceding ones, the ammonia yielded by the nitrogen in fertilizers is given instead of the nitrogen itself, as in the trade goods are still bought and sold on the ammonia basis. The per cent. of nitrogen is readily calculated, as fourteen-seventeenths of the ammonia is practically the per cent. of the nitrogen it contains.

Grades:

In the following table the number of acid phosphates, acid phosphates with potash, complete fertilizers and cotton seed meals of each grade according to guarantee, is placed side by side with the number found on analysis to belong to that grade, fertilizers having commercial values equal to those of schedule grades being placed in those grades:

	High.		Standard.		Low.	
	Claimed.	Found.	Claimed.	Found.	Claimed.	Found.
Complete fertilizers .....(1,199)	827	892	324	289	48	18
Acid phosphates with potash (85)	68	78	17	6	....	1
Acid phosphates .....(176)	174	173	2	3	....	....
Cotton seed meals .....(171)	1	32	170	137	....	2
Total .....(1,631)	1,070	1,175	513	435	48	21

These results are due to the following changes in grade ascertained by analysis:

	Low to High.	Low to Standard.	Standard to High.	High to Standard.	High to to Low.	Standard to Low.	No Change.
Complete fertilizers .....(1,199)	4	31	70	11	....	5	1,078
Acid phosphates with potash....(85)	....	....	10	....	....	1	74
Acid phosphates .....(176)	....	....	1	2	....	....	173
Cotton seed meals .....(171)	....	....	30	....	....	2	139
Total .....(1,631)	4	31	111	13	....	8	1,464

This shows that out of 1,631 samples, 1,464 were of the grade claimed for them, 146 were of a higher grade, while only 21 were of lower grade than that claimed for them.

In order to compare the results of the grades of last season with this, the following summary is given:

	1911-1912. Grade.			1912-1913. Grade.		
	Claimed.	Above.	Below.	Claimed.	Above.	Below.
Complete fertilizers	800	152	8	1,078	105	16
Acid phosphates with potash	85	15	16	74	10	1
Acid phosphates	177	1	2	173	1	2
Cotton seed meals	130	21	1	139	30	2

Nitrogen: Deficiencies, Sources and Availability—

In connection with the subject of deficients in nitrogen, or the equivalent ammonia, the following table is interesting. It is to be noted that none of the deficient samples here given were deficient in relative commercial value:

Year	Number of Samples.	Deficient in One or more Ingredients.	Deficient in in Nitrogen Only.	Deficient in Nitrogen— Per Cent.
1905	522	165	61	36.96
1906	655	201	87	43.28
1907	743	153	81	52.94
1908	713	161	77	47.82
1909	805	197	74	37.56
1910	1,188	235	79	33.61
1911	1,605	393	107	27.22
1912	1,689	380	71	18.68
1913	1,922	389	190	48.84

It is noteworthy that the number of samples deficient in ammonia only is larger than has been the case since 1907, and that there is a very large increase in the number over last season.

The nitrogen availability standard for mixed and unmixed fertilizers for the past season required by the Board of Fertilizer Control has been as follows:

1st. The Modified Neutral Permanganate Method of Street has been adopted.

2nd. An unmixed fertilizing material furnishing organic nitrogen must show an availability of 85 per cent. of the *total organic nitrogen* by Street's method.

3rd. Mixed fertilizers furnishing nitrogen must show an availability of 85 per cent. of the *total nitrogen*, when a one gram sample is used, but in other respects the method of Street is applied. PROVIDED, *in addition*, that if the water-insoluble

organic nitrogen amounts to one half or more of the total nitrogen, this water-insoluble organic nitrogen must also show an availability of at least 50 per cent. by Street's method conducted exactly as described.

Of the 1,098 complete, mixed fertilizers examined this season, the availability of the total nitrogen found was as follows:

900 samples, or about 82 per cent., were 95 to 100.
168 samples, or about 15 1-4 per cent., were 90 to 94.
28 samples, or about 2 1-2 per cent., were 85 to 89.
2 samples were found BELOW 85 per cent.

The two samples found below the 85 per cent. requirement for *total nitrogen* were as follows:

Number.	Availability of the Total Nitrogen.	Manufacturer and Brand.	Sources of Nitrogen Claimed. Organic and Mineral.
492	82.70	Greer Fert. Co. Greer's Standard, 9-2-2.	Dried Blood, Nitrate of Soda, No. 1 Tankage.
857	83.80	Swift's Fert. Works. Swift's Potato Grower.	

As compared with last season, over 97 per cent. of the samples showed an availability of over 90 against 53.5 per cent. for last season; while only two samples fell below the requirement for this season against ten for last season, in spite of the fact that the standard of availability was raised from 80 to 85 per cent. The *water-insoluble organic nitrogen* was determined, of course, in all of the 1,098 complete fertilizers above referred to; the availability, however, being determined as a rule only in those cases where the water-insoluble organic nitrogen amounted to as much as one-half of the total nitrogen. The whole number of samples in which the availability of the water-insoluble organic nitrogen was determined was 307, and the availability is shown in the following table:

102	samples	were found	from 90 to 100	per cent.
71	samples	were found	from 86 to 89	per cent.
82	samples	were found	from 80 to 85	per cent.
27	samples	were found	from 75 to 79	per cent.
12	samples	were found	from 70 to 74	per cent.
8	samples	were found	from 65 to 69	per cent.
2	samples	were found	from 60 to 64	per cent.
2	samples	were found	from 50 to 59	per cent.
1	sample	below 50 per cent.		
307				

It is only right to say that the one sample found below 50 per cent. in the availability of the water-insoluble organic nitrogen, nevertheless met the requirements of our standards in every respect, as the water-insoluble organic nitrogen did not amount to as much as one-half of the total nitrogen and the availability of the total nitrogen was 96 per cent.

The results obtained this season in the determination of the availability of the water-insoluble organic nitrogen in 307 samples of complete fertilizers prove conclusively that the 50 per cent. water-insoluble organic nitrogen availability requirement in the case of mixed fertilizers is much too low and should be raised, as only 13 samples fell below 70 and 25 below 75 per cent. in availability.

The figures given in the following table are the results obtained in the determination of the nitrogen availability of various nitrogenous materials examined by Street's Neutral Permanganate Method during the past season:

Material.	Per Cent. of Nitrogen.						
	Total.	As Ammonia.	As Water—Sol. Organic.	As Permanganate Sol. Organic.	As Insol. Organic.	Per Cent. Solubility of Organic Nitrogen.	
						Total.	Water Insol.
Dried Blood	12.68	0.125	1.47	8.98	2.10	83	81
" "	13.13	0.125	1.92	8.70	2.38	82	78
" "	13.70	0.313	1.88	10.71	0.80	94	93
" "	13.47	0.180	1.91	10.11	1.27	90	89
Average	13.24	0.186	1.79	9.62	1.64	87	85
Cotton Seed Meal	5.87	Traces	0.99	4.64	0.24	96	95
" " "	6.10	Traces	1.44	4.21	0.45	93	90
" " "	6.22	Traces	1.06	4.91	0.25	96	95
" " "	6.78	Traces	1.37	5.04	0.37	95	93
" " "	5.87	Traces	0.93	4.67	0.27	95	94
" " "	6.22	Traces	0.86	4.64	0.71	88	87
" " "	6.04	Traces	0.88	4.46	0.70	88	86
" " "	6.56	Traces	0.65	5.71	0.20	97	96
" " "	6.04	Traces	0.91	4.95	0.18	97	96
" " "	5.93	Traces	1.55	3.89	0.49	92	89
" " "	6.68	Traces	1.30	4.71	0.67	90	88
" " "	6.22	Traces	0.87	4.98	0.37	94	93
" " "	6.10	Traces	1.50	4.18	0.42	93	91
" " "	6.05	Traces	1.23	4.38	0.44	93	91
" " "	6.22	Traces	0.81	4.69	0.72	88	87
Average	6.19	Traces	1.09	4.67	0.43	93	92
Dried Fish	7.83	0.22	2.96	3.85	0.81	89	83
" "	8.52	0.78	1.56	5.57	0.61	92	90
" "	8.18	0.87	1.87	4.72	0.72	90	87
" "	9.79	0.13	1.79	6.34	1.55	84	81
" "	10.02	0.16	0.80	8.12	0.95	91	90
" "	9.44	0.06	1.88	6.45	1.05	89	86
" "	7.95	1.12	1.76	4.33	0.74	89	85
Average	8.82	0.48	1.80	5.62	0.92	89	86
Whale Guano	9.23	0.25	3.04	5.12	0.82	91	86
" "	9.52	0.22	3.30	5.29	0.71	92	88
" "	10.13	0.62	3.63	5.43	0.45	95	92
Average	9.62	0.36	3.32	5.28	0.66	93	89
Fish Blubber	3.57	0.75	1.07	1.35	0.40	86	77
Fish Tankage	8.18	0.59	2.45	4.38	0.75	90	85
Tankage	8.64	1.59	1.48	4.95	0.62	91	89
"	9.21	0.57	0.79	6.93	0.92	89	88
"	8.18	0.79	2.15	4.34	0.91	88	83
"	8.64	0.75	1.71	5.57	0.61	92	90
" Hog	8.07	0.00	2.00	5.18	0.89	89	85
" Hog	7.08	0.19	1.57	4.73	0.60	91	89
" Cattle	5.41	0.18	1.85	3.21	0.17	96	95
Average	7.89	0.58	1.65	4.99	0.64	91	88
Bone Meal	2.48	0.00	0.42	1.86	0.20	92	90
Castor Meal	4.98	0.06	0.64	3.74	0.45	91	90
Rape-Castor Meal	4.18	0.00	0.68	3.02	0.48	88	87
Sunflower Seed Meal	3.74	0.00	2.36	1.27	0.11	97	92
Mowrah Meal	2.59	0.00	0.47	1.52	0.60	77	72
Meat Meal	8.41	0.75	0.98	5.98	0.70	91	90
Meat Meal	8.06	0.12	1.25	6.04	0.65	92	90

Material.	Per Cent. of Nitrogen.						
	Total.	As Ammonia.	As Water—Sol. Organic.	As Permanganate Sol. Organic.	As Insol. Organic.	Per Cent. Solubility of Organic Nitrogen.	
						Total.	Water Insol.
Leather Preparations—							
Nitrogenous Manure	6.31	0.12	0.94	4.23	1.02	84	81
" "	6.10	0.12	2.54	2.63	0.81	86	77
" "	6.99	0.22	2.33	3.26	1.18	83	74
" "	7.40	0.25	1.46	5.25	0.44	94	92
" "	6.91	0.12	1.55	4.06	1.07	84	79
" "	8.98	0.19	1.03	7.38	0.38	96	95
" "	6.91	0.34	2.57	3.44	1.28	91	86
" "	7.43	0.77	0.48	5.07	1.11	83	82
" "	8.87	0.34	2.65	4.86	1.02	88	83
" "	6.91	0.18	1.85	3.86	1.02	85	79
" "	7.03	0.14	2.54	3.29	1.07	85	76
Average	7.26	0.25	1.81	4.30	0.95	87	82
Nitrogenous Material	8.04	0.00	0.85	5.69	1.50	81	79
Organic Manure	6.91	1.03	3.19	2.54	0.15	97	95
Nitrolene	8.57	0.00	3.69	4.50	0.38	96	92
Azotine	8.32	0.31	4.45	3.05	0.51	94	86
Leather Meal	6.10	0.00	1.85	3.51	0.74	84	83
" "	5.90	0.03	1.62	3.42	0.83	86	81
Beet Root Manure	5.33	1.19	0.76	2.74	0.64	85	81
" " "	6.97	1.94	1.03	3.42	1.58	88	85
" " "	5.17	1.22	0.95	2.56	0.44	89	85
" " "	6.22	1.28	0.27	3.86	0.81	84	83
Average	5.92	1.41	0.75	3.15	0.87	87	84
Tartar Pomace	4.49	0.50	0.30	2.02	1.67	58	65
Grape Pomace	1.56	0.00	0.06	0.85	0.65	58	57
Humus Tankage	2.41	0.00	0.22	0.85	1.34	44	39
L. G. Tankage	6.45	0.44	2.01	3.05	0.95	84	76
Made Tankage	7.92	0.63	3.04	3.51	0.74	90	83

The results given in the above table appear to furnish ample justification for the nitrogen availability standard adopted by the Board of Fertilizer Control at the beginning of the fertilizer season just closed. It is evident from these results that good nitrogenous materials should show an availability of at least 85 per cent. of the *total organic nitrogen.*

The Secretary of the Board of Fertilizer Control informs me that the manufacturers' registrations for the past fertilizer season show no marked improvement in the definiteness with which the term *tankage* is used. It, therefore, seems not only proper but desirable to call special attention to the following paragraph which appeared in my last annual report:

The term "tankage" has been long in use by the manufacturers of commercial fertilizers to denote a product obtained from slaughter house refuse—a packing house by-product. It is unfortunate, therefore, that this term, so firmly fixed in the minds of the purchasers and users of commercial fertilizers as desig-

nating a long tried and well recognized nitrogenous fertilizing material of high availability, should now be applied, without qualification, to any tank-rendered nitrogenous material. Whether intentional or not, such a loose application of the term tankage is calculated to mislead the consumer. While it may be true that many of the numerous leather tankages have a high availability, measured by both field and laboratory tests, it is nevertheless only fair to the consumer that such materials be sold under names which shall serve to plainly distinguish them from the familiar slaughter house tankages. It is gratifying to note in some of the registrations that the terms "kanona tankage" and "azotin" are used. While the term "azotin" appears now to be very seldom used in connection with slaughter house refuse, it has been so used, and it would, perhaps, be better, in order to avoid any possible misapprehension as to its meaning, to qualify it by calling it "Munro's azotin" or by some other distinguishing name.

Farmers' Samples of Fertilizers:

In addition to the official samples of fertilizers, there have been analyzed this season 139 samples for individual purchasers, as provided for in Section 1540 of the Fertilizer Law.

Waters:

There have been analyzed this season 100 samples of waters from different parts of the State. Of these analyses, seventy-five were sanitary examinations, the remaining twenty-five mineral water or complete analyses.

Ores and Minerals:

Of the twenty-seven samples included under this head, twenty-four were assays of ores for gold and silver, two were iron ore analyses and one a phosphate rock.

In addition to the above, fifty-nine samples of rocks, minerals, etc., have been received for identification and examined.

Miscellaneous:

Of the four samples under this head, there was one each of the following materials: Keith's Ground Phosphate Lime; boiler scale; muck; ashes.

Distribution of the Work:

The fertilizers were analyzed by Messrs. B. F. Robertson, C. F. Inman, C. S. Lykes and J. T. Foy.

The assays of ores for gold, silver, etc., and the analyses of phosphate rock, limestones, ashes, and iron ore and nearly all of the waters were made by Mr. B. Freeman. Mr. Freeman also did considerable special work on certain samples of fertilizers, in cases where it became necessary to do so. Before the regular work of the fertilizer season began, Messrs. Inman, Lykes and Foy assisted in the general analytical work. Mr. Inman made four sanitary and one complete water analysis, and continued a special piece of work on some waters, begun by Mr. Freeman, for the Union Bleaching & Finishing Co., Greenville, S. C. Mr. Lykes made complete analyses of two soils and of two waters. Mr. Foy made three sanitary and three complete water analyses. Mr. Robertson also helped in the general analytical work, making certain special determinations, as iodine and bromine and boric acid in waters, and analyzing an iron ore.

The nitrogen availability work on fertilizers and fertilizing materials was performed by Mr. G. F. Lipscomb, assisted by Mr. G. H. Zerbst.

It gives me pleasure to be able to say that all of these assistants have done faithful and efficient work and that perfect harmony has prevailed.

Very respectfully,

R. N. BRACKETT,
Chief Chemist.

REPORT OF STATE VETERINARIAN.

Clemson College, S. C., May 29, 1913.

President W. M. Riggs, Clemson College, S. C.

Dear Sir: I respectfully submit the following report as State Veterinarian for the period beginning July 1, 1912, and ending May 31, 1913.

PART I. INVESTIGATION OF CONTAGIOUS DISEASES.

Hog Cholera:

This disease is still prevalent throughout the entire State. Requests for investigations are not as numerous as last year, but orders for serum are rapidly increasing. Our serum has given very satisfactory results, as shown by attached pamphlet in which reports on its use have been compiled. Since the establishment of our serum plant we have been able, with a few exceptions, to fill all orders for serum.

Investigations by our Veterinarians have been made as follows:

County.	Herds.	Hogs Lost Before Investigation.	Healthy Hogs Treated.
Anderson	3	several	40
Aiken	2	11	66
Barnwell	1	not cholera	0
Calhoun	1	not cholera	0
Chester	1	9	0
Chesterfield	1	7	28
Colleton	3	several	44
Darlington	3	50	49
Fairfield	1	15	0
Florence	2	8	16
Greenwood	1	1	6
Lee	1	15	10
Lexington	2	6	17
Newberry	1	2	8
Orangeburg	3	11	41

Glanders:

This disease was reported in the following counties. The table given below shows the investigations made, number of animals mallein tested, also number of glandered animals destroyed.

County.	Number Investigations.	Glanders Found?	Animals Dead.	Animals Tested.	Animals Killed.	Quarters Held for Test.	Source of Infection
Anderson	3	Yes	.....	7	5	.....	Glanders developed in a horse shipped from Atlanta eight months before.
Aiken	1	No	.....	.....	.....	.....	
Barnwell	2	No	.....	.....	.....	.....	
Chesterfield	5	Yes	.....	7	3	.....	Chronic case in the neighborhood for several years.
Darlington	1	Yes	.....	.....	1	.....	
Fairfield	1	No	.....	.....	.....	.....	
Georgetown	1	No	.....	.....	.....	.....	
Greenwood	1	No	.....	.....	.....	.....	
Hampton	1	No	.....	.....	.....	.....	
Lexington	1	No	.....	.....	.....	.....	
Marion	1	No	.....	.....	.....	.....	
Newberry	1	*	.....	2	.....	.....	Retest of quarantined animals.
Oconee	1	No	.....	.....	.....	.....	
Orangeburg	3	No	.....	.....	.....	.....	
Pickens	1	No	.....	1	.....	.....	
Saluda	1	No	.....	.....	.....	.....	
Spartanburg	1	No	.....	.....	.....	.....	
Sumter	1	?	1	.....	.....	.....	Died before arrival of veterinarian.
Williamsburg	6	Yes	.....	3	3	.....	Outbreak of previous year.

*Exposed.

Attention is directed to the fact that only one outbreak could be traced to imported animals. In this instance the diseased animal was imported eight months before our investigation and probably showed no symptoms at that time. This illustrates the value of requiring inspection of imported live stock.

Influenza:

This disease (commonly called shipping fever) is one that we are not supposed to investigate, but a very virulent form of this disease has existed among imported animals this year and has caused heavy losses, consequently the following investigations were made:

Abbeville County, 4 horses and mules lost, 4 sick.
Anderson County, 6 horses and mules lost, 1 sick.
Anderson County, 4 Shetland ponies lost, 5 sick.
Cherokee County, 25 horses and mules lost, 3 sick.
Edgefield County, 3 horses and mules lost, 2 sick.

Lancaster County, 1 horse lost, none sick.
Oconee County, 2 horses and mules lost, 4 sick.
Orangeburg County, 4 horses and mules lost, 5 sick.
York County, 1 horse lost, none sick.

Other losses were reported in Williamsburg, Florence, Darlington, Spartanburg, Marion, and Anderson Counties.

Importation of animals affected with this disease could be prevented, but if this was done, it would greatly limit importation of horses and mules, as practically all are affected with this disease when shipped, and would cause considerable loss to shippers whose animals would be held up for treatment at Augusta, Atlanta, and other points.

So-Called Cerebro-Spinal Meningitis. (Forage Poisoning):

The following table shows investigations made and horses and mules lost:

	Dead.	Sick.	Exposed.
Anderson County	0	1	30
Fairfield County	3	1	12
Fairfield County	6	2	30
Greenwood County	several	1	5
Greenville County	15	0	6
Greenville County	25-30	3	18
Hampton County	5	1	20
Laurens County	2	0	1
Laurens County	2	1	40
Pickens County	1	1	0
Richland County	6	0	10

Outbreaks were also reported in Anderson, Lexington, Chesterfield, and Lancaster Counties. This disease is caused by feeding damaged corn or fodder. At least 95 per cent. of affected animals die. The disease is promptly checked by discontinuing the feeding of damaged food. Press Bulletins giving full information with regard to this disease are published each fall in all County papers.

Tuberculosis:

The following table shows investigations made:

County.	Number Herds.	Total Number Cattle.	Healthy.	Tuberculous.	Destroyed.	Held for Retest.	Quarantined.
Aiken	3	78	.....	4	4	70	Four shipped to Georgia.
Chester	4	72	70	.....	.....	2	Held for retest.
Chesterfield	1	31	.....	1	1	30	Held for retest. Bull tested by Dr. Morse, Sumter, S. C.
Greenwood	1	12	.....	1	1	.....	All cattle on premises held for test.
Oconee	1	100	100	.....	.....	.....	
Marlboro	7	11	11	.....	.....	.....	
Spartanburg	2	20	20	.....	.....	.....	

Cattle in Marlboro County were driven into South Carolina (without being tested) in violation of State law. Prosecution was impossible, as the guilty party resides in North Carolina.

In Newberry County one cow was destroyed, at owner's request, because tuberculosis was suspected. The animal was not tuberculous.

In Richland County sixteen cattle in one dairy were tested by a private practitioner and condemned. These were appraised and destroyed by this office.

Haemorrhagic Septicaemia:

This disease was reported in Clarendon, Darlington, and Williamsburg Counties. The cattle, fifteen in number, died before arrival of the veterinarian and no others were sick. The owner's description of symptoms corresponded with those shown by animals affected with Haemorrhagic Septicaemia. Preventive measures were outlined.

Stomach Worm Disease:

One outbreak was investigated in Greenwood County where several calves had been lost and others were sick. Post mortem examination confirmed diagnosis. Preventive measures were outlined.

Symptomatic Anthrax. (Black Leg):

This disease appeared in herds in Oconee and Spartanburg

Counties. Several young cattle were lost before arrival of veterinarian. All young stock in exposed herds were vaccinated and no further cases developed.

Purulent Conjunctivitis:

Eight horses and mules on one farm in Edgefield County were found affected with this disease. Treatment was prescribed.

Contagious Abortion:

This disease was suspected in a herd in Pickens County. A veterinarian was sent to these premises and owner was advised as to sanitary measures to be adopted in case other animals aborted. No further abortions have been reported.

Rabies:

Five cattle were lost in Abbeville County before arrival of veterinarian. Description of symptoms would indicate that animals might have been affected with rabies. No further losses were reported.

Investigation of Violations:

Several carloads of cattle were shipped into South Carolina, during the period covered by this report, which were billed for immediate slaughter. As it was suspected that these were dairy cattle and not intended for immediate slaughter, the shipments were investigated and it was found that the law had not been evaded in these instances. A case against the Southern Railway will be tried at the September term of court in Greenville County.

PART II. TICK ERADICATION WORK.

Since submitting my previous annual report, over 1,400 square miles have been sufficiently freed from ticks to justify the release of this area from Federal quarantine. On March 1, 1913, the U. S. Department of Agriculture released from Federal quarantine the Counties of Marlboro, Darlington, York, that portion of Lancaster County north of Waxhaw Creek, and all of Chester County north of the Lancaster & Chester Railway and west of the Southern Railway. This makes a total of over 8,400 square miles released from Federal quarantine since 1907, when we began the work of tick eradication.

Dipping vats have been constructed in the following counties. Several of these were constructed by Dr. Quigley.

	Vats.		Vats.
Darlington County	6	Lee County	2
Dorchester County	1	Lexington County	3
Fairfield County	1	Marlboro County	2
Florence County	3	Newberry County	1
Kershaw County	2	Richland County	2
Lancaster County	6		

Approximate number of premises that will remain under quarantine July 1, 1913, in counties where tick eradication is being conducted along systematic lines.

	Premises.		Premises.
Abbeville County	30	Greenwood County	1
Anderson County	2	Marlboro County	11
Chester County	65	Pickens County	8
Darlington County	14	Union County	1
Greenville County	1	York County	12

That portion of Lancaster County released from Federal quarantine, 3 premises.

Counties entirely freed from ticks: Oconee, Laurens, Spartanburg, and Cherokee.

Extension of Tick Eradication:

In accordance with instructions of the Veterinary Committee, co-operation was requested from the counties placed under quarantine last year as well as from Kershaw County.

Officials of Saluda County Association would not call a meeting of their Association. The Associations of Lexington and Lancaster Counties failed to raise funds for co-operation.

Chesterfield, Lee and Newberry Counties are now raising funds, but have not yet reported. It is believed that these counties will co-operate this year.

Florence, Fairfield and Kershaw Counties have raised required funds and agents have been placed in these counties.

Officials of Darlington County Association would not call a meeting of their Association, but their Secretary gave us to

understand that their Association would complete the work in their county. They later refused to furnish any financial assistance.

The Marlboro County Association agrees to complete the work in that county.

Violations:

Violations of quarantine regulations for the control of Splenetic Fever have been vigorously prosecuted. Twenty-one convictions have been secured, preliminary hearings have been held in two cases which will be tried at the next term of Circuit Court, and several other cases are now awaiting trial in the Magistrates' courts.

PART III. HOG CHOLERA SERUM WORK.

During the period covered by this report 134,625 cc (approximately 6,732 doses) of tested anti-hog cholera serum has been produced by this Division. With the exception of 30,000 cc, now on hand, this amount of serum has been distributed to citizens of the State at cost of production—2 cents per cc. This work has been greatly retarded by scarcity of susceptible hogs, it being necessary to secure practically all hogs used from North Carolina. If susceptible hogs can be secured at less expense, I believe we can distribute potent serum at 1 1-2 cents per cc next year.

Inspection of Imported Live Stock:

The following animals, accompanied by health certificates as required by law, have entered South Carolina during the period covered by this report. Owing to irregularities in inspection, the authorization of several veterinarians in other States has been revoked.

Horses and mules	15,129
Feeding cattle	2,420
Breeding and dairy cattle (tuberculin tested)	144
Hogs for breeding purposes	335
Sheep and goats	1

Correspondence:

During the past eleven months this office has mailed over 3,000 letters. Many of these letters were in reply to questions regarding treatment of live stock in communities where veterinarians are not available.

Respectfully submitted,

M. RAY POWERS.

REPORT OF SOUTH CAROLINA STATE CROP PEST COMMISSION.

Clemson College, S. C., June 30, 1913.

Dr. W. M. Riggs, President Clemson College.
(Through Prof. J. N. Harper.)

Dear Sir: We beg to submit the following report of the work of the State Entomologist and State Pathologist for the fiscal year ending June 30th. This report is submitted in six parts, as follows: Part I, Nursery and Orchard Inspection in South Carolina; Part II, Interstate Nursery Quarantine; Part III, Foreign Importations; Part IV, Seed Regulations; Part V, Boll Weevil Quarantine; Part VI, Recommendations for Furthering the Service.

PART I. NURSERY AND ORCHARD INSPECTION IN SOUTH CAROLINA.

This is the first season that the provisions of the new law were operated, and the results have been very satisfactory. The provision of the Rules and Regulations of the Commission in regard to fumigating equipments for nurseries in South Carolina met no opposition whatever. Any nurseryman in the State who did not already have in operation a fumigating plant immediately obtained the necessary instructions and proceeded to provide one. This feature of the work brings this branch of the service up to date, and not only gives our home-grown stock better protection but is also an incentive to keep dealers and growers on their guard against the importation of infested stock. It has also facilitated the work of our home nurseries which have stock for export, as practically all States have this fumigation requirement. The inspection service in this State is appreciated, and in a few instances growers of herbaceous and cut flowers, though exempt from the law, requested inspection and then ordered tags for use as an advertisement to show that every precaution is taken to avoid the dissemination of infested plants.

The orchard work has made satisfactory progress. To carry on the San Jose scale extermination work by these offices would be

unnecessarily expensive. To enforce a statutory measure of this kind a few years ago would have been a total impossibility owing to the fact that no spray pumps were available. In prosecuting the orchard demonstration work this fact was kept in mind. This work created a large amount of healthy agitation on the subject, and has resulted in bringing to this State a large number of pumps. The problem is merely educational, and requires no coercion. A large number of orchards are treated annually. The orchards of the State for the most part are old and the tendency to replace them by young ones properly cared for brings a satisfactory solution of the problems. The line of operation, therefore, is not the execution of a statutory measure but measures of co-operation which not only are rapidly reducing scale but are also bringing about better orchard practices.

The list of South Carolina nurseries inspected and certified during the past fiscal year follows:

SOUTH CAROLINA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Greenville Nurs. Co.	Greenville	Aug. 29	1	100	5	June 1, '13
Oakway Nursery	Westminster	Nov. 22	7	100	30	June 1, '13
C. M. Newman	Charleston	Sept. 5	16	200	60	June 1, '13
M. O. Dantzler	Orangeburg	Sept. 6	6	100	91	June 1, '13
Jno B. Wiggins	Holly Hill	Nov. 22	7	100	94	June 1, '13
W. S. Middleton	Meriwether	Dec. 10	8	100	96	June 1, '13
Jude Robinson	Rowesville	Sept. 5	9	100	98	June 1, '13
Rose Hill Nurseries	Columbia	Sept. 3	10	3	99	June 1, '13
R. F. Vann	Columbia	Dec. 20	10	100	102	June 1, '13

Part II—Interstate Nursery Quarantine:

During the past year seventeen States shipped stock into South Carolina and their activities may be judged from the following summary:

State.	Number of Nurseries Ordering Tags.	Number of Tags Ordered.
Virginia	3	300
Ohio	8	400
New York	17	1,000
Alabama	7	703
Tennessee	7	3,700
Georgia	18	3,800
Florida	4	600
Missouri	5	900

Maryland	3	204
North Carolina....	13	400
Pennsylvania	6	1,500
Texas	1	100
New Jersey	1	100
Iowa	1	100
Mississippi	1	100
Nebraska	1	100
Wisconsin	1	100
Total		12,107

The total number of tags issued is 12,107. Seven thousand, five hundred, or over one-half of the total number of tags issued, went to Tennessee and Alabama. North Carolina ranks third with a total of 1,500. It is evident that practically all our interstate importations originate in the States of Tennessee, Alabama and North Carolina. Practically all of the stock shipped from the Northern nurseries consists of ornamental plants.

The out-of-State nurseries to whom permits were issued during the last fiscal year are tabulated below according to States:

ALABAMA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Chase Nursery Co.	Huntsville & Chase	July 18.....	1....	100....	2....	July 15, '13
Frazer Nursery Co.....	Huntsville	July 24.....	7....	100....	6....	July 15, '13
A. W. Newson	Huntsville	July 19.....	2....	100....	39....	July 15, '13
Huntsville W'sale Nurs...	Huntsville	July 23.....	4....	200....	55....	July 15, '13
Florala N. & Trading Co..	Florala	Oct. 7.....	.....	100....	52....	July 15, '13
Eagle Pecan Co.	Pittsview	Sept. 20.....	46....	100....	70....	July 15, '13
Irvington Nurs.	Irvington	Sept. 6.....	34....	3....	107....	July 15, '13
				703		

FLORIDA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Griffing Bros. Co.	Macclenny	Sept. 24.....	.....	100....	36....	July 15, '13
Summit Nurseries	Monticello	Sept. 28.....	1a....	200....	46....	July 15, '13
Turkey Creek Nurs. Co...	Macclenny	Oct. 11.....	.....	100....	71....	July 15, '13
Glen St. Mary Nurs. Co...	Glen St. Mary.	Oct. 16.....	1	200....	76....	July 15, '13
				600		

GEORGIA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
A. C. Oelschig & Sons	Savannah	Apr. 23	67	100	1	Apr. 23, '13
P. J. Berckmans Co.	Augusta	July 18	1	1,000	4	July 18, '13
Pike Co. Nurs.	Concord	Sept. 9	16	100	14	Sept. 9, '13
Smith Bros. Nurs.	Concord	Aug. 19	4	300	16	Aug. 19, '13
Georgia Nurs. Co.	Concord	Aug. 22	5	100	31	Aug. 22, '13
Excelsior Nurs.	Rome	Aug. 26	B 74	100	34	Aug. 26, '13
Georgia Seed Co.	Hogansville	Sept. 30	33	1,000	45	Sept. 30, '13
H. G. Hastings Seed Co.	Atlanta	Oct. 5	38	300	51	Oct. 5, '13
A. D. Williams	Yatesville	Oct. 2	34	100	66	Oct. 2, '13
Hartswell Nurs.	Hartswell	Sept. 19	22	100	74	Sept 19, '13
G. M. Bacon Pecan Co.	DeWitt	Sept. 13	28	100	77	Sept. 13, '13
Rood Pecan Groves	Albany	Oct. 10	45	100	82	Oct. 10, '13
Pecan Grove Farms Nurs.	Cairo	Oct. 2	35	100	85	Oct. 2, '13
B. W. Stone & Co.	Thomasville	Sept. 17	25	100	89	Sept. 17, '13
Fayette Co. Nurs.	Fayetteville	Sept. 23	8	100	100	Sept. 23, '13
Barnwell Pecan & Orchard Co.	Baconton	Oct. 17	47	200	103	Oct. 17, '13
Jas. Cureton	Austell	Aug. 29	43	100	87	Aug. 29, '13
Barnesville Nurs. Co.	Barnesville	Oct. 2	35	100	85	Oct. 2, '13
				3,800		

ILLINOIS.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
D. Hill Nursery Co.	Dundee	Aug. 14	21	.....	43	Aug. 14, '13

IOWA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Shenandoah Nurseries	Shenandoah	July 10	35	100	85	July 10, '13
				100		

KANSAS.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Wieles Nurseries	Ottawa	June 1	A 347	100	18	June 1, '13
				100		

MARYLAND.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Franklin Davis Nurs. Co.	Baltimore	Sept. 5	14	100	48	Sept. 5, '13
Harrison Nurseries	Berlin	Aug. 25	12	100	56	Aug. 25, '13
S. S. Murrell	Marion	Oct. 22	40	4	100	Oct. 22, '13
				204		

MISSISSIPPI.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Mrs. W. R. Stuart	Ocean Springs	Oct. 16	20	100	95	Oct. 16, '13

MISSOURI.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Wild Bros. Co.	Sarcoxie	Aug. 29	1a	.....	41	Aug. 29, '13
Stark Bros. Nurs. & Orchard Co.	Louisiana	July 22	.....	500	61	July 22, '13
Missouri Nurs. Co.	Louisiana	July 7	1	100	88	July 7, '13
Wm. P. Stark Nurs.	Stark City	Aug. 31	.....	.....	92	Aug. 31, '13
Wm. P. Stark Nurs.	Neosho	Aug. 31	.....	300	105	Aug. 31, '13
				900		

NEBRASKA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
German Nurseries	Beatrice	Sept. 11	1	100	101	Sept. 11, '13
				100		

NEW JERSEY.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
North Jersey Nurs.	Millburn	Sept. 4	46	100	72	Sept. 4, '13
				100		

NEW YORK.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Jackson & Perkins Co.	Newark	Sept. 5	61	100	10	Sept. 1, '13
T. S. Hubbard Co.	Fredonia	Sept. 3	11	100	11	Sept. 1, '13
Lewis Roesch & Son	Fredonia	Sept. 3	45	100n	15	Sept. 1, '13
F. E. Schifferli	Fredonia	Sept. 3	25	.....	17	Sept. 1, '13
Ellwanger & Barry	Fredonia	Sept. 3	74	100	19	Sept. 1, '13
Josselyn Nurs. Co.	Fredonia	Sept. 3	10	100	20	Sept. 1, '13
Richland Nurs.	Rochester	Sept. 4	1,410	100	27	Sept. 1, '13
R. B. Griffith	Fredonia	Sept. 3	1,517	.....	32	Sept. 1, '13
Peter Henderson & Co.	New York	Aug. 18	31	100	40	Sept. 1, '13
Glenn Bros.	Rochester	Sept. 21	267	.....	44	Sept. 1, '13
H. S. Taylor & Co.	Rochester	Sept. 16	169	100	49	Sept. 1, '13
Reilly Bros.	Danville	Sept. 17	692	.....	79	Sept. 1, '13
Green's Nurs. Co.	Rochester	Sept. 24	105b	.....	80	Sept. 1, '13
Denton, Williams & Denton	Danville	Sept. 9	916	100	83	Sept. 1, '13
Samuel Fraser	Geneseo	Sept. 19	1,152	.....	93	Sept. 1, '13
Kelly Bros.	Danville	Sept. 24	128	.....	104	Sept. 1, '13
L. W. Hall & Co.	Rochester	Oct. 4	604	100	108	Sept. 1, '13
				1,000		

NORTH CAROLINA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Maple Grove Nursery	Hartshorn	Sept. 25	36	100	73	Sept. 30, '13
Valdesian Nurseries	Bostic	Aug. 10	5	100	78	Sept. 30, '13
Durham Nursery	Durham	Oct. 26	.....	700	81	Sept. 30, '13
Biltmore Nurseries	Biltmore	Aug. 10	4	100	7	Sept. 30, '13
Buffalo Nurs. Co.	McCullers	Sept. 9	.....	100	13	Sept. 30, '13
Continental Plant Co.	Kittrell	Aug. 30	27	500	29	Sept. 30, '13
J. Van Lindley Nurs. Co.	Greensboro	Sept. 25	31	1,500	38	Sept. 30, '13
Greensboro Nurs. Co.	Greensboro	Sept. 25	30	400	33	Sept. 30, '13
Catawba Co. Nurs.	Newton	Oct. 4	43	100	55	Sept. 30, '13
Killian Nursery	Newton	Oct. 3	41	100	59	Sept. 30, '13
Thorneburg Nurs. Co.	Newton	Oct. 3	42	100	63	Sept. 30, '13
North State Nurs. Co.	Julian	Oct. 5	46	100	68	Sept. 30, '13
Blanton Nursery	Shelby	Oct. 9	47	100	90	Sept. 30, '13
				4,000		

OHIO.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
G. H. Mellen Co.	Springfield	Aug. 19	28	.....	21	Sept. 15, '13
Schmidt & Botley	Springfield	Aug. 23	57	100	22	Sept. 15, '13
Fairview Floral Co.	Springfield	Aug. 28	82	.....	83	Sept. 15, '13
Xenia Star Nursery	Xenia	Aug. 28	83	.....	24	Sept. 15, '13
Storrs & Harrison	Painesville	Aug. 9	9	100	25	Sept. 15, '13
W. N. Scarff	New Carlisle	Aug. 23	60	100	26	Sept. 15, '13
W. A. Allen & Sons.	Geneva	Oct. 2	134	.....	69	Sept. 15, '13
Spring Hill Nurs.	Tippecanoe City	Aug. 9	6	100	106	Sept. 15, '13
				400		

PENNSYLVANIA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Andorra Nurseries	Chestnut Hill	Aug. 14	1,952	100	3	Aug. 31, '13
Harper Bros. & Thomas Co.	West Chester	Sept. 4	47	100	9	Aug. 31, '13
Henry A. Dreer	Philadelphia	Sept. 9	1	1,000	12	Aug. 31, '13
Thomas Meehan & Sons.	Germantown	Sept. 16	B 74	100	34	Aug. 31, '13
Thomas Meehan & Sons.	Dresher	Mch. 31	B 75	100	42	Aug. 31, '13
Wm. H. Moon Co.	Morrisville	Sept. 16	B 73	100	75	Aug. 31, '13
				1,500		

TENNESSEE.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Southern Nurs. Co.	Winchester	Aug. 14	91	2,000	8	Aug. 1, '13
J. C. Hale Nurs. Co.	Winchester	Aug. 30	87	100	33	Aug. 1, '13
Knoxville Nurs. Co.	Knoxville	July 24	202	100	37	Aug. 1, '13
Standard Nursery Co.	Powell Station.	Sept. 30	212	100	47	Aug. 1, '13
Union Nurs. Co.	Smithville	Sept. 6	73	1,000	57	Aug. 1, '13
Mountain View Nurs.	Smithville	Sept. 9	371	300	58	Aug. 1, '13
Marble City Nurs. Co.	Knoxville	Aug. 1	203	100	62	Aug. 1, '13
				3,700		

TEXAS.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Munson Nurseries	Denison	Sept. 3	236	100	67	July 1, '13
				100		

VIRGINIA.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
The Globe Nurseries	Bristol, Ten-Va.	Aug. 8	343	100	28	Sept. 1, '13
Virginia Nurseries	Richmond	Aug 23	400	100	64	Sept. 1, '13
Old Dominion Nurs.	Richmond	Aug. 23	400	100	65	Sept. 1, '13
				300		

WISCONSIN.

Name of Nursery.	Address.	Date Inspected.	Cert. No.	Tags Ordered.	Permit No.	Permit Expires.
Evergreen Nursery Co.	Sturgeon Bay	Sept. 24	102	.....	110	Sept. 24, '13

III—Foreign Importations:

With the passage by Congress of the "Plant Quarantine Act," regulating the importation of foreign nursery stock, this branch of the service has been greatly helped. The Federal Horticultural Board, with headquarters at Washington, D. C., is charged with the enforcement of this act. Although the shipments are not regularly inspected at ports of entry, the Federal Board carefully notifies the quarantine officers of the various States regarding shipments reaching American ports of entry, and consigned to points in their respective States. This is a great improvement in the inspection of imported stock, as it provides an opportunity for

the officials of the various States to examine practically every foreign shipment consigned to their respective States. The wisdom of this provision has already been proven in other States where infestations were discovered when inspecting the stock at the transportation office at destination. International importations may be broken after reaching destination, and later reconsigned as interstate shipments. Through co-operation of transportation officials as well as consignees in this State ,we are notified, and believe that the following list covers completely foreign importations into South Carolina:

RECORD OF FOREIGN IMPORTATIONS INTO SOUTH CAROLINA.

From	Date	Permit No.	Marks	Shipped to	Address	Contents	Inspected	Condition
New York	October 2	22	CB31NY	Greenville Flo. Co.	Greenville	1 case Ornamental Shrubs.	December 18	Good
New York	October 16	237	B&A975/6	C. A. Moss	Spartanburg	120 Evergreens.	November 5	Good
New York	October 16	14	WS116/17	C. M. Newman	Charleston	200 Evergreens.	October 29	Good
New York	October 21	585	VG112-116	C. M. Newman	Charleston	400 Evergreens	October 29	Good
New York	October 22	591	BA1132	C. M. Newman	Charleston	102 Evergreens.	November 2	Good
New York	October 30	1,059	GB	Greenville Flo. Co.	Greenville	695 roses, 30 Ornamental, Deciduous Shrubs, 5 Evergreen Shrubs.	November 13	Fair
Baskoop, Holland, New York	Nov. 6	(?)	112/16	C. M. Newman	Charleston	5 cases Azaleas.	November 20	Good
Melle, New York	Nov. 6	(?)	1131-1	C. M. Newman	Charleston	1 case Azaleas.	November 20	Good
Olivet, New York	Nov. 11	(?)	CB130	Greenville Flo. Co.	Greenville	3 cases Roses.	November 21	Good
Maltus & Ware, Brokers, New York	Nov. 20	235	KB&S1794-7	C. M. Newman	Charleston	7 cases Genistra, 200 plants.	November 31	Good
W. F. Kastings Co., Brokers, Buffalo	Nov. 1			Anderson Flo. Co.	Anderson	25 Azaleas.	November 27	Good

A consignment of 3,076 evergreens from Boxford Nursery, Boxford, Mass., after inspection by Federal inspector, was shipped to David Jennings, Greenville, S. C. Owing to the fact that this nursery is in Brown Tail Moth territory it was again inspected at destination merely as extra precaution.

Fortunately the stock received from foreign points was all in good condition. This should not in the least cause us to regard them less lightly. Most people, especially the entomologists, are aware of the danger from imported pests. These importations are among the most injurious of American insect pests. Examples are San Jose scale, boll weevil, gypsy moth, brown tail moth and others too numerous to record here. Other insect pests and plant diseases are threatening. The sweet potato root borer, since its introduction into the United States at New Orleans, has spread over Louisiana and Texas. The little New Orleans ant is another of these pestiferous introductions that has come to stay.

PART IV. SEED REGULATIONS.

The sections of our regulations which deal with the transportation and sale of diseased seed are new in that such regulations, so far as we know, have never been imposed by other States. Our work along this line has, therefore, been original, as we have had no precedents to follow. The system which we have adopted, however, seems entirely practical, and has so far apparently worked very satisfactorily.

It seems thus far that in the few cases where the law has been violated, it has been through ignorance and not through any desire on the part of the parties concerned to evade the law. With a view of avoiding such violations in the future a number of newspaper articles and press bulletins were written on the subject last fall. Several of these are appended hereto. The fact that anthracnose caused heavy losses in many sections of the State last summer has helped to emphasize the serious nature of the disease, and has aroused the people to the point where they see the necessity of some such control measure.

Diseased Seed Brought into the State Last Year.

We have evidence that large quantities of diseased seed were shipped into the State last year before the Crop Pest Commission Act went into effect. The disastrous results of the planting

of such seed have served to bring about a strong sentiment in favor of the regulations adopted by the Commission relative to the sale of diseased seed. One case might be cited here as an example.

A certain party of Duluth, Ga., shipped, according to his own statements, between 1,000 and 1,200 bushels of seed of his "Half and Half" variety of cotton into this State for planting purposes last spring, and sold them for $5 per bushel. We found these seed to be diseased, and made an effort to determine the amount of anthracnose that developed in cotton grown from them in different sections of the State. From a number of reports received from farmers who had planted these seed, we were assured that the loss in individual cases varied from 30 per cent. to 75 per cent., and in one case a total loss was reported. One acre was planted with these seed on the Experiment Station farm, and by actual count 48 per cent. of the bolls were found to have been destroyed by anthracnose. You will readily see from this that the party not only sold over 1,000 bushels of diseased cotton seed to South Carolina farmers last season at the enormous price of $5 per bushel, but, in addition, spread anthracnose over 500 farms in this State. Many cases of a similar nature have come to our attention.

Anthracnose in Staple Cotton.

There was considerable discussion last summer and fall concerning the disease in staple cotton. Some of the growers claimed that a strict enforcement of the regulations as first adopted would seriously cripple the staple cotton industry. In order to secure data on this point, Mr. F. W. Risher, graduate assistant of the Botany Division, was sent out to a number of points in the State in October of last year to make a survey of the situation. This survey covered 72 farms with a total of 3,500 acres of upland long staple cotton. Anthracnose was found to be much worse on some farms and on some varieties than others, but was found to some extent on every farm visited. The per cent. of disease in the cotton on the different farms varied from 1 per cent. to 16 per cent. Data secured during this survey formed the basis for the recommendation made in November that the Commission allow the sale of seed of staple cotton from fields where not more than 5 per cent. of the cotton was diseased. We realize that the limit should be much lower than 5 per cent., and hope that it can be reduced this

fall to 3 per cent., or, if possible, to 2 per cent., without interfering with the progress of the staple cotton industry. Since the law went into effect last May the following permits have been issued:

SEED PERMITS.

Name.	Address.	Aff. Filed.	Tags Ordered.	Permit Number.	Number Bushels.
D. R. Coker	Hartsville	January 6	5,200	1 and 2	11,250
W. T. Hite	Augusta, Ga.	January 6	100	4	500
Geo. D. Sanders	Fairfax	January 20	100	6	200
J. A. Russell	Society Hill	January 20	100	5	75
J. R. Register	Lamar	January 20	100	3	500
B. W. Segars	Sumter	January 20	500	8	1,000
Fair Wold Farm	Columbia	January 20	500	8	1,000
J. M. Napier	Jordan	January 21	300	9	1,000
H. C. & T. W. Reeder.	Edmunds	January 22	200	10	350
H. Eugene Fant	Seneca	January 31	200	11	300
W. A. Bowman	Sumter	February 5	200	12	400
B. W. Segars	Sumter	February 5	200	13	150
J. L. Bass	Darlington	February 5	100	14	200
J. M. Graham	Alcolu	February 10	200	15	275
J. R. Young & Co...	Charleston	February 11	500	16	1,000
T. M. Crosswell	Dalzell	February 11	100	17	200
Wannamaker & Sons..	St. Matthews	February 21	500	18	1,500
M. S. McKinnon	Hartsville	February 25	1,000	19	2,300
T. M. Green	Bishopville	March 17	200	20	300
Chas. Crosland	Bennettsville	March 25	100	21	200
J. L. Bass	Darlington	March 28	100	22	500

It will be seen from the above table that permits have been issued for the sale of over 20,000 bushels of planting seed since these regulations went into effect.

We feel that all of the honest seedsmen of the State are giving us their hearty co-operation in this matter, and are doing all in their power to help enforce the regulations. The railway companies have also promised co-operation, and have already, in a number of cases, refused to accept for shipment seed which were not properly tagged. Since this part of the work is conducted strictly on the honor system, and no inspectors are maintained, the law must have the hearty co-operation of all parties concerned, or it will be of no value.

It is impossible now to predict what the results will be. The first indication of the success or failure of this part of the law will come with the end of the present season when we can see what has been accomplished. We feel, however, that the hearty co-operation which we have thus far received insures a success.

In order to give information in regard to the handling of infected seed the following article was published:

EXTENSION ARTICLE—SEPTEMBER 16, 1912.

Spread of Cotton Anthracnose Through Seed.

The fungus boll rot of cotton, cotton anthracnose, seems to be especially prevalent in this State this season. A great many cases have been reported where the disease is occurring in certain new varieties of cotton purchased from seed dealers and growers.

We have learned from our investigations here that anthracnose is carried in the seed, and, from a study of the outbreaks in the State, have found that the majority of outbreaks reported have been caused by planting diseased seed.

A number of new varieties of cotton grown in this State this season for the first time are badly diseased. In fact, it seems that we get the majority of our bad outbreaks of anthracnose from seed purchased from other States, and especially from Georgia. One of these varieties, called the "Half and Half," seems to be diseased this season wherever grown. We experience the same thing every year. Last year and the year before Brown's No. 1 was affected in the same way. One gentleman from Georgia writes me that he sold seed to between five and six hundred farmers in this State last winter and spring. We have some of this same gentleman's cotton growing on the Experiment Station farm this season, and if all the cotton grown from the seed is as badly diseased as that planted here, the distribution and sale of this seed is going to cost the South Carolina farmers many thousands of dollars. I received a letter recently from a gentleman who writes as follows regarding the same variety of cotton: "I have nine acres of it planted, and after careful inspection, by three disinterested parties, they estimate that 75 per cent. of the bolls are rotten."

Many other reports of a similar nature have been received during the past few weeks. We shall be very glad to hear from all the farmers in South Carolina who are suffering losses from anthracnose caused by planting such seed.

It seems that there is nothing that can be done about the sale of this diseased seed now, but a strenuous effort will be made to prevent its recurrence. This kind of business has been going one now for several years, and it was just this year that we succeeded in getting a law passed which prevents the sale or transportation of seed for planting unless each shipment is accompanied by a permit issued by the South Carolina Crop Pest Commission. This Commission has headquarters at Clemson College.

It is hoped that this season will prove a lesson to those who have been buying seed without knowing whether or not they were diseased, and that everybody will join with the Crop Pest Commission in preventing the violation of this law. We are sorry the law was not in effect last winter so as to serve as a protection to the farmers who bought diseased seed and planted them this season.

Any inquiries relative to anthracnose should be addressed to Botany Division, Clemson College, S. C.

Summerour's Half and Half Cotton.

Over one hundred reports have come to this office during the past few months in reference to anthracnose in Summerours "Half and Half" cotton.

In some cases planters have reported as high as 75 per cent. of the bolls of this variety destroyed by anthracnose. In very few cases does the estimated loss fall below 50 per cent. In the acre planted on the Experiment Station farm here 48 per cent. of the bolls failed to open.

Mr. Summerour writes me that he sold seed to between five and six hundred farmers in the State. If all who have planted this cotton have suffered as have those from whom we have heard, the loss to the State this season in this variety of cotton will amount to more than ten thousand dollars.

Our investigations here have proved conclusively that anthracnose is carried in the seed. This fact is also evidenced by the histories of the hundreds of cases of the disease reported in the State during the past four years.

No one should buy cotton seed for planting unless the seller will make affidavit that these seed are free from anthracnose. There is a law now in force (The Crop Pest Commission Act) which prohibits the sale or transportation of seed in this State unless each package contains a tag issued by the State Crop Pest Commission. It is hoped that the farmers and transportation companies will co-operate with the Crop Pest Commission in the enforcement of this law, and thus aid in eliminating this destructive disease. Those who are suffering loss from anthracnose can, of course, get rid of the trouble by seed selection and crop rotation. In selecting seed it is necessary that the seed selected be taken only from stalks which contain no diseased bolls.

Anthracnose in the Staple Cottons.

It seems from the information at hand that all of the staple cottons are more or less affected with cotton anthracnose. Fields have been visited in many sections of the State this fall, and wherever we have found staple cotton we have found anthracnose. A survey recently made in a portion of the territory in which staple cotton is grown reveals the fact that anthracnose is causing serious loss there. Forty-seven farms on which Keenan cotton is growing, including 2,958 acres, were examined, and on these farms 2.8 per cent. of the cotton was destroyed. Twenty farms, including 502 acres of Webber cotton, were examined, and on these an average of 9.6 per cent. of the bolls were diseased by anthracnose. An examination of three farms, including 64 acres of Hartsville No. 7, showed 6.3 per cent. diseased, and two farms, including 15 acres of Columbia, showed 6.6 per cent. of the cotton destroyed by anthracnose. This means that the people in this community received more than ten thousand dollars less for their cotton this season than they would have received had their cotton been free from anthracnose.

Aside from observations and surveys made by this office a number of cases have been reported by farmers in different sections of the State of serious losses in staple cotton by this disease. It looks, then, as though some immediate action is needed if we are to protect the staple cotton industry from the ravages of this troublesome disease.

It seems now that it is going to be impossible for all those who desire to plant staple cotton next year to secure seed which are absolutely free from anthracnose, but I wish to call attention again to the fact that this disease is carried in the seed, and to advise those who are contemplating planting such cotton to make every effort to secure seed which are free from disease.

I also wish at this time to call especial attention of those who have such seed for sale to the fact that the State Crop Pest Commission Act, which was passed by the last Legislature, makes it unlawful for any one to sell or transport seed within the State unless each package bears a tag issued by the State Crop Pest Commission giving the seller permission to sell or transport the seed. It is possible that the Commission will make some concession in the case of staple cotton seed this year, and allow seed sold from fields which contain some anthracnose—probably

as much as 5 per cent. This, if permitted at all, however, will be only for this year. In the future all kinds of seed which are offered for sale must be free from disease. Breeders should keep this in mind and make every effort to free their cotton now from anthracnose. This can readily be done if proper precautions are taken in selecting seed for next year's planting. The Botany Division of Clemson College stands ready to do all in its power to help those interested in ridding their cotton of anthracnose.

PART V. BOLL WEEVIL QUARANTINE REGULATIONS.

The territory that lies between South Carolina and the boll weevil section is rapidly growing less. The weevil has much more than regained his setback of two years ago. It is only a matter of four or five years when this pest will reach South Carolina in spite of anything that we can do. The average rainfall of South Carolina is equal to that of Texas during its worst weevil years. It is true that good cotton crops were made in the northern half of the weevil belt, but it is well to regard this condition with reserve. There have been a series of seasons adverse to weevil propagation. When it reaches this State there will be a severe reaction in our agricultural practices, and it will require a few years for matters to readjust themselves. It is our purpose to use every precaution to keep out the weevil until it reaches us by natural distribution. For this reason the Rules and Regulations were revised so as to entirely prohibit the importation of cotton seed for any purpose whatsoever. Our methods of fumigation, though very effective and of great practical value, apparently are not absolutely safe, especially when operating in large quantities of seed.

The most serious violation of the boll weevil quarantine regulations occurred in Marlboro County. A report was brought to the attention of the Crop Pest Commission from a number of sources almost simultaneously that a carload of cotton seed from weevil territory had arrived at Bennettsville. The shipment was found and immediately quarantined, fumigated and such other precautions taken to make it reasonably harmless until a thorough investigation could be completed. The investigation showed that the shipment contained 436 sacks of Allen Long Staple cotton seed grown at Port Gibson, Miss., and shipped by S.

Bernheimer & Son, Port Gibson, to A. J. Matheson, Bennettsville, S. C. The car was routed over the Y. & M. R. R., Port Gibson to Memphis; Frisco R. R., Memphis to Birmingham, and via the A. C. L. R. R. to Bennettsville. It was explained that the detour was made to reduce the freight rate. A portion of the seed had been delivered to different parties in the county. All of the seed was collected and stored with the original shipment, and upon examining the sacks after a tremendous fumigation with carbon bisulphide the weevil condition was such that release was not considered safe, and the option was given the owner either to have the seed shipped back to Mississippi or have them destroyed. After the owner refused to reship the seed the entire consignment was carefully removed to the Bennettsville Light & Power Company furnaces and burned. Other shipments having arrived in the county were also collected and shipped back to Mississippi with the exception of a small quantity which was burned. The complete records of these cases are in the Crop Pest Commission files. All suspected cases were exhaustively investigated, and in the collection of contraband seed, the weights of the seed were carefully checked to balance with the weights given on original lading bills.

General Insect Control.

The insect outbreaks during the year were numerous and varied. When the last fiscal report went to press we were facing an outbreak of the fall army worm (Lapygma frugiperda). This pest, which had left us unmolested for a series of years, made a general invasion of this State, and made heavy demands on these offices. The first reports came in June from the western counties of the State, and the outbreak spread with remarkable rapidity. During July every section of the State was infested, and the injury continued until September. The last generation went into winter quarters heavily parasitized. The damage to corn and cotton was comparatively light owing to the caterpillars' preference for the grasses. There is a general preference for crab grass, vetch and Bermuda grass. A large amount of powdered arsenate of lead was used throughout the State.

The cotton red spider (Tetranychus gloveri) displayed its usual activities during dry weather of July and August. A number of our spray pumps were dispatched to various parts of the State to assist in meeting emergencies.

The fig tree borer (Leptostylus commixtus) is becoming a serious pest on fig trees. It attacks the trunk, and its work is similar to that of the apple tree borer in apple trees, and the effects are very severe, killing many trees. This insect requires attention.

During dry weather of April and May the little black flea beetle (Chaetocnema pulicaria) became "freaky" on young corn. Reports of injury reached us from a number of localities in the upper two-thirds of the State. The timely rains, however, stimulated the corn, and this, combined with his dislike for rains, put an end to his performance in the corn fields.

The cowpea pod weevil (Chalcodermus æneus) played his usual pranks in the cotton fields during May. The injuries occurred sporadically in Hampton, Bamberg, Orangeburg, Sumter and Marlboro counties. In the last named county it created considerable excitement because it was mistaken for the boll weevil. The general damage was comparatively small owing to the timely rains, and its insistent preference for cowpeas. We believe that the damage can be avoided after this season.

A pest that is becoming seriously important is the gloomy scale (Aspidiotus tenebricosus) on maple. This is an infester of the trunks and branches, and is becoming alarmingly abundant, causing serious losses to private and municipal shade trees. It is frequently accompanied by that other notorious maple scale known as cottony maple scale (Pulvinaria innumerabalis). The latter mainly infests the leaves and twigs. This dual problem is requiring our attention, and is being prosecuted.

The water oaks are becoming severely infested with the oak scale (Lecaneum quercifex). This is another problem before us, as the pest is destroying water oaks used for shade in private lawns and on the streets.

The spring season was notable for the comparative absence of the green bug (Toxoptera graminum). It was the subject of much discussion because the reddish discoloration of oats was erroneously attributed to this pest.

There was no general outbreak, but several severe sporadic outbreaks occurred in the coast and near-coast counties. These areas were small and scattered.

Assistance is given during these outbreaks by personal visits, by correspondence and also with machinery and insecticides when

the emergency necessitates it.

Thanking you for your continued interest and support, we are

Respectfully yours,

A. F. CONRADI,
State Entomologist.
H. W. BARRE,
State Pathologist.

REPORT OF EXPERIMENT STATION.

Clemson College, S. C., July 8, 1913.

Dr. W. M. Riggs, President Clemson College.

Dear Sir: I have the honor of submitting herewith a brief report of the work of the South Carolina Experiment Station for the fiscal year ending June 30th, 1913.

During the year a number of the members of the Station Staff rendered assistance to the Superintendent of the Extension Division in conducting institutes in various parts of the State, and the Station in co-operation with other departments of the College made a splendid exhibit at the State Fair last autumn, and at the National Corn Exposition this past spring.

The co-operative work with the Department of Agriculture in a number of experiments has been continued. During the year we have not added any new Adams projects, and most of the work is a continuation of that planned a number of years ago.

Horticultural Division:

The work of the Horticultural Division has been mainly with the *Rotundifolia grapes*. The object of the experiment is to determine whether or not varieties of this type are self-sterile. These experiments have progressed most satisfactorily.

This Division has also conducted experiments with the following: Variety tests of bunch grapes, apples, peaches, Japanese persimmons, blackberries, raspberries, strawberries, okra, tomatoes, Irish potatoes, etc. During the year the Horticultural Division distributed a considerable quantity of seed of the variety of okra developed by the Division.

Entomological Division:

The Entomological Division has continued its work at the Marion Field Laboratory in studying the ravages of the cotton root louse. Splendid results have been obtained from these experiments. The most complete life history of this insect ever worked out has been accomplished at this laboratory. The planting of rye and vetch as cover crops last fall were unusually suc-

cessful and acted as a most thorough cleanser on the cotton root louse-infested fields, and the results obtained thus far have been most valuable.

In working out the life history of the wire-worm at the Colleton Laboratory considerable information has been obtained. This insect does considerable damage on the corn in that region. A simple method has been worked out for preventing the ravages of this insect. This Division is spending much time in perfecting an apparatus to be used in determining the importance of moisture in the activity of insects. This piece of apparatus is now being used satisfactorily.

Experiments have been conducted for the control of the gloomy scale, which is a great pest on maple shade trees in the State, and considerable experimental work has been done with the cowpea pod weevil, peach tree borer, and a number of other destructive insects.

Botany Division:

The splendid work of the Division of Botany with cotton anthracnose has been continued, and this work is now about completed. During the past year considerable attention was devoted to the kind of bolls which produce diseased seed, and the botanist has accumulated considerable data to show that it is not at all safe to select seed for planting from cotton stalks which contain any disease at all. New laboratory methods for detecting the presence of the disease were discovered.

A plant disease survey was made of the anthracnose in staple cotton in Darlington County last year. This survey covered 3,539 acres, and included about 75 farms. A full report of this was included in the Crop Pest Commission report.

A cotton shedding problem is now well under way. Last year's results indicate that water is the principal factor to be considered.

The forestry experiments which were started at the Coast Station last spring have been continued, and we now have practically all of the ten-acre tract planted.

The cotton wilt work, which is being carried on in co-operation with the Bureau of Plant Industry, has been continued along the same lines as before. The farmers in the communities in which this work is being conducted are taking an active interest in it, and seem very much gratified with the results which we have been able to obtain. During the past winter and spring all of the

pedigreed seed grown by the co-operative breeders in the different counties of the wilt section were sold. There was such a demand for these seed it was a hard matter for some who desired them to secure them. One of the varieties, Dixie, has been considerably improved by selection. The plantings this season on the farms of the co-operative breeders are larger than heretofore, and it is the desire of the botanist to grow enough seed to supply the demand. The plant breeding work connected with this wilt work is especially promising. Many of the stalk selections made year before last showed up remarkably well in progeny rows last season, and seed from these are now planted under field conditions. In this same connection the work with cowpeas and with the Yokohama velvet bean has been both interesting and profitable. The control of cotton wilt would be impossible without some legume as velvet beans or cowpeas, some varieties of which are resistant to root knot. In this work several new strains of pedigreed cowpea seed are being used.

Division of Chemistry:

The Division of Chemistry has just completed a most valuable piece of work. The chemist has discovered that when either muriate of potash or kainit is mixed with basic slag a part of the potash soluble in water before mixing is rendered insoluble. This insolubility is due to the formation of a compound insoluble in water but almost entirely soluble in hydrochloric acid of specific gravity 1.115. This is an Adams project, and the complete report of this work will be given in a bulletin.

Considerable progress was also made in this division on the Adams problems of determining the cause of the poisoning of hogs by the feeding of cotton seed meal.

Agronomy Division:

The work of the Agronomy Division has been mainly in testing something like thirty varieties of wheat and a number of varieties of oats, barley, rye and a great number of varieties of corn and about thirty varieties of cotton. The Station has now a variety of cotton developed here that is superior to any of the long staple varieties.

Our work in corn breeding is being continued with more or less success.

The rotation and fertilizer experiments inaugurated several years ago have been continued.

Animal Husbandry Division:

The work of the Division of Animal Husbandry to determine the physiological and pathological effect of feeding large amounts of cotton seed meal to cows, begun several years ago, has been changed slightly. At present eight cows are being used in the experiment, four of which are being fed cotton seed meal alone as a concentrate, while the balance are given wheat bran as a concentrate.

The experiment to determine the effect of cotton seed meal poisoning in hogs has also been continued. The prime object of this experiment at present is to test the toxicity of various cotton seed meals and to determine if there is any resistance to meals shown by different breeds of hogs.

A complete report of the work of the Experiment Station will be published in the near future. This report will include detailed reports from the heads of each division.

Very truly yours,

J. N. HARPER,
Director.

1913 REPORT OF VISITORS CLEMSON COLLEGE

To the Honorable, the Board of Trustees of Clemson College:

We beg leave to report that your Board met at the College in the afternoon of May 6th, with every member present. That evening was spent in conference with President Riggs, who discussed with us all items of our previous annual report, and informed us as to what had been done to carry out our recommendations. We were much pleased to find that many of our suggestions had been acted upon favorably by your Board and the executive head of the Institution.

We found a notable improvement in some features of the Institution, viz:

1st. The appearance of the College farm indicates that it is well organized and efficiently managed.

2d. We commend Lieutenant Cummins, the Commandant, for the marked improvement in the discipline and appearance of the student body.

We find, also, that the one-year students are doing excellent work, and that this course is filling a real need in the educational program of the State, and we recommend that everything possible be done to enlarge the attendance and increase the efficiency of this course.

We are impressed with the fact that the agricultural students should be kept in close touch with the work of the Experiment Station, and feel that it is vital that they should all have as much practical field work as possible in botany, entomology, plant breeding, variety testing, etc. We feel that nothing can give a young man more enthusiasm for the profession of agriculture than the revelation to him of the great beauty and interest of practical scientific co-operation with Nature.

We commend the plan adopted for the manufacture and distribution of hog cholera serum, through which an adequate supply has been assured for distribution at cost to the farmers. We feel that if the Farm Demonstration Agents in each county do their duty in advising the farmers that they can always get the serum, and will co-operate with them in administering it, the hog cholera situation will have been practically solved.

We regret to learn that the revenues of the College for the past year have shown practically no gain over the preceding year, and we believe that the Board should go to the Legislature and ask for funds for the construction of a gymnasium building and possibly for other needed improvements, if the revenues of the Institution do not promptly warrant their construction out of the regular income.

We submit to the Board the following facts for their consideration:

The Cadets are required to study until 10 p. m. They are allowed to burn their lights until 11:30 p. m. Reveille is sounded at 5:45 a. m., and they are required to be on parade grounds at 6 a. m. The daily schedule is so full that the hours for recreation and play are necessarily brief, and the Cadets are unable to sleep any during the daytime. Several members of your Board discussed these facts with your President, and expressed the opinion to him that growing boys at hard work should be allowed at least eight hours' sleep, and should be required to remain in bed at least seven hours. He pointed out to us that with the present schedule of work that it would be impossible to allow the students more time for rest, and we agree with him that such is the case. We feel, however, that the physical well being of the students should be the prime consideration in the arrangement of the curriculum, and that the schedule for next session should be so arranged that the Cadets will have more time for rest.

We wish to commend President Riggs for his frankness in dealing with the Board of Visitors, and to express our appreciation of the very courteous treatment accorded our Board by him and everyone else with whom we came in contact at the College.

We feel that the College is doing a splendid and increasingly efficient work, and feel that our contact with this Institution during the past two years has been a most valuable privilege.

(Signed) R. O. PURDY,
Chairman.

(Signed) DAVID R. COKER,
Secretary.